

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF WISCONSIN
MILWAUKEE DIVISION**

PSLC LLC,

Plaintiff,

v.

GENERAC POWER SYSTEMS, INC.,

Defendant.

Case No. 2:24-cv-01270-PP

JURY TRIAL DEMANDED

**DEFENDANT GENERAC POWER SYSTEMS, INC.'S
INVALIDITY CONTENTIONS**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	AMENDMENT/SUPPLEMENTATION	2
III.	ALLEGED PRIORITY DATE AND RELATED INVALIDITY ISSUES	6
IV.	IDENTIFICATION OF PRIOR ART.....	6
A.	PRIOR ART PATENTS AND PRINTED PUBLICATIONS	6
1.	U.S. Patent No. 10,879,727.....	6
2.	U.S. Patent No. 10,892,618.....	8
3.	U.S. Patent No. 11,967,857.....	9
B.	PRIOR ART SYSTEMS AND DEVICES	11
1.	'727 Patent	12
2.	'618 Patent	15
3.	'857 Patent	19
C.	APPLICANT ADMITTED PRIOR ART	23
V.	INVALIDITY GROUNDS.....	24
A.	ANTICIPATION.....	24
B.	OBVIOUSNESS	27
(a)	'727 Patent	35
(b)	'618 Patent	51
(c)	'857 Patent	91
VI.	CLAIM CHARTS.....	129
VII.	OTHER GROUNDS FOR INVALIDITY	130
A.	INVALIDITY UNDER 35 U.S.C. § 112.....	130

1.	Lack of Written Description and/or Enablement Under 35 U.S.C. § 112 (a).	130
(a)	'727 Patent	132
(b)	'618 Patent	132
(c)	'857 Patent	135
2.	Indefiniteness Under 35 U.S.C. § 112 (b).....	136
(a)	'727 Patent	138
(b)	'618 Patent	138
B.	INVALIDITY UNDER 35 U.S.C. § 101.....	141
VIII.	ACCOMPANYING DOCUMENT PRODUCTION	142

Under the Scheduling Order, (Dkt No. 30), Defendant Generac Power Systems, Inc. provides its Invalidity Contentions concerning U.S. Patent No. 10,879,727 (the “’727 Patent”), 10,892,618 (the “’618 Patent”), and 11,967,857 (the “’857 Patent”) (collectively, the “Asserted Patents”) to Plaintiff PSLC LLC.

The citation of prior art herein and the accompanying exhibits are not intended to reflect Defendant’s claim construction contentions, which will be disclosed in due course in accordance with the Scheduling Order and may instead reflect Plaintiff’s apparent constructions based on its Infringement Contentions.

I. INTRODUCTION

As disclosed in its Infringement Contentions served on Defendant, Plaintiff asserts the following claims of the Asserted Patents (the “Asserted Claims”):

Patent	Asserted Claims	Chart Prefix
’727 Patent	Claims 13, 37	A
’618 Patent	Claims 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30	B
’857 Patent	Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 27, 66, 71	C

The claims identified above are referenced as “the Asserted Claims” unless reference is made specifically with respect to particularly identified one or more of the Asserted Patents and/or one or more of the Asserted Claims. Further, the citation of prior art herein and the accompanying exhibits are not intended to reflect Defendant’s claim construction contentions, which will be disclosed in due course in accordance with the Scheduling Order. Instead, Defendant’s Invalidity Contentions as set forth herein and in the accompanying exhibits may reflect Plaintiff’s apparent claim constructions based on its Infringement Contentions, with which Defendants disagree.

As further detailed in and supported by these Invalidity Contentions, Defendant contends that the Asserted Claims are invalid under at least 35 U.S.C. §§ 102, 103, or 112. Defendant reserves the right to prove the invalidity of the Asserted Claims on bases other than those required to be disclosed in these disclosures in these Invalidity Contentions.

II. AMENDMENT/SUPPLEMENTATION

Defendant's Invalidity Contentions pertain to the Asserted Claims as identified in Plaintiff's Infringement Contentions. If the Court later allows Plaintiff to amend its Infringement Contentions or assert one or more claims other than the Asserted Claims, Defendant reserves the right to modify, amend, or supplement these Invalidity Contentions accordingly to, for example, show the invalidity of any such newly Asserted Claims.

These Invalidity Contentions are based on Defendant's current understanding of the Asserted Claims and Plaintiff's apparent view of the scope of the claim as shown, for example, in Plaintiff's Infringement Contentions. A *Markman* Order has not yet been issued—thus, these Invalidity Contentions should not be taken as any admission or acquiescence by Defendant as to the proper scope of the Asserted Claims or proper claim constructions of terms and phrases recited in each claim. By identifying prior art that anticipates or renders obvious the Asserted Claims, Defendant does not admit that the claim limitations are capable of construction, does not admit that any claim limitations are supported with an appropriate written description and enabling disclosure in the applicable patent specifications, and does not adopt Plaintiff's apparent claim constructions nor admit the accuracy of any particular claim construction.¹ Defendant reserves all

¹ Defendant does not concede that Plaintiff's apparent interpretation of the claim is correct—it asserts the well-established principle that whatever infringes a claim if later in time anticipates if earlier in time. *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1378 (Fed. Cir. 2001). Thus, where Plaintiff for purposes of its infringement case alleges that a feature of an accused product meets a particular limitation recited in the Asserted Claims, then that feature, should it be found in the prior art, would also cause that limitation to be met for invalidity purposes.

rights to later challenge or oppose any claim constructions advanced by Plaintiff and to present its own claim construction positions as permitted by the Court.

Defendant further reserves the right to revise these Invalidity Contentions in view of the Court's construction of terms and phrases recited in the Asserted Claims, additional information obtained during discovery, additional infringement theories put forth by Plaintiff during fact or expert discovery, any findings as to the priority date(s) of the Asserted Claims, or positions that Plaintiff, its fact witnesses, or its expert witness(es) may take concerning claim construction, infringement, or invalidity issues, as permitted by the Court. Defendant further reserves the right to supplement its accompanying document production should it later discover additional prior art documents, information, testimony, prior art systems and related documentation, including information provided by third parties after the date of service of these Invalidity Contentions.

Defendant may further rely on inventor admissions concerning the scope or state of the prior art relevant to the Asserted Claims, the patent prosecution history of the Asserted Patents, related patents or patent applications, any deposition or trial testimony of the named inventors on the Asserted Patents, and the papers filed or evidence produced by Plaintiff in connection with these cases or other related litigation. Defendant reserves the right to contend that the Asserted Claims are invalid under 35 U.S.C. § 102(f) in the event Defendant obtains evidence that one or more of the named inventors did not invent the subject matter in the Asserted Claims.

Prior art not included in these Invalidity Contentions, whether known or not known to Defendant, may become relevant. In particular, Defendant is unaware of the extent, if any, to which Plaintiff will contend that limitations of the Asserted Claims are not disclosed in the prior art identified in these Invalidity Contentions. Accordingly, Defendant reserves the right to identify

other references that would disclose the allegedly missing limitation(s) of the claimed method, device, or system.

The references identified in these Invalidity Contentions, which include the attached claim charts, may disclose the elements of the Asserted Claims explicitly or inherently, or they may be relied upon to show the state of the art in the relevant time frame. References identified in these Invalidity Contentions, as well as the “References Cited” on the face of the Asserted Patents and the patents cited within the body of the Asserted Patents, may illustrate, but not limit the scope of, the state of the art to which the Asserted Patents pertains (*i.e.*, at a time prior to the date of alleged inventions of the Asserted Claims of the Asserted Patents). Moreover, Defendant reserves the ability to rely on later identified sources of information, including, but not limited to, witness testimony and other discovery, to establish the state of the art in the relevant time frame pertaining to the Asserted Patents.

Because discovery recently started, Defendant anticipates that additional prior art and invalidity bases may be found. Defendant’s investigation and analysis of the prior art is continuing, and thus Defendant reserves the right to supplement, amend, or revise the information provided herein as Defendant conducts further investigation or analysis, including identifying, charting, and relying on additional references.

Additionally, in view of likely third-party discovery that will be taken, Defendant reserves the right to present more items of prior art under 35 U.S.C. §§ 102(a), (b), (e), or (g) or § 103 located during discovery or further investigation, and to assert contentions of invalidity under 35 U.S.C. §§ 102(c), (d), or (f). For example, Defendant expects to issue subpoenas to third parties believed to have knowledge, documents, or other evidence of invalidity of the Asserted Claims.

In addition to the positions and prior art identified in these Invalidity Contentions (including the accompanying invalidity claim charts), Defendant also incorporates by reference all Invalidity Contentions, prior art,² and invalidity claim charts (including, without limitation, all anticipation positions, obviousness positions—including all prior art combinations and motivations to combine—indefiniteness positions, written description positions, and non-enablement positions) concerning the Asserted Patents, as disclosed at any time. This includes without limitation disclosures: in previous or related litigation to which Defendant was and is not directly involved, in any United States Patent & Trademark Office (“USPTO”) proceedings; by the Plaintiff; or by the named inventors or any individuals associated with the prosecution or post-grant review of the Asserted Patents.

Specifically, for example, Defendant identifies, as prior art upon which it may rely to show the invalidity of the Asserted Claims, the prior art references disclosed by parties in any other litigation involving the Asserted Patents, any patent related to any of the Asserted Patents, or any other patent allegedly assigned to PSLC claiming priority to the Asserted Patents.³

Plaintiff has a duty to produce to Defendant all relevant documents from other PSLC proceedings including, but not limited to, all prior art, Invalidity Contentions, and expert reports on invalidity (among other relevant items).

Defendant reserves the right to supplement or otherwise amend these Invalidity Contentions in response to any relevant discovery provided by third parties, Plaintiff, opening or

² Given that prior art appearing in the file history of the Asserted Patents is readily available, such prior art will not be separately produced. Indeed, such art is not required to be separately produced by Defendant under the local rules in federal districts that are most experienced with patent litigation (e.g., the Eastern District of Texas’ P.R. 3-4.)

³ This includes the invalidity contentions and related prior art associated with other cases filed before, contemporaneously with, or after this suit.

rebuttal expert reports, fact or expert depositions, or in response to any claim construction ruling(s) issued by this Court (regardless of how and when such ruling is made). Defendant also reserves the right to supplement or otherwise amend these Invalidity Contentions in response to any rebuttal evidence disclosed by Plaintiff or as otherwise may be necessary or appropriate under the circumstances.

III. ALLEGED PRIORITY DATE AND RELATED INVALIDITY ISSUES

Plaintiff's Infringement Contentions assert that the Asserted Claims are entitled to a priority date of May 26, 2011. To the extent Plaintiff alleges any other priority date for any of the Asserted Claims, Defendant reserves the right to modify, amend, or supplement its Invalidity Contentions with additional prior art references.

Notwithstanding its prior reservation of rights, Defendant also reserves the right to argue that it has been unduly prejudiced should Plaintiff allege an earlier priority date for the Asserted Claims, and that accordingly Plaintiff should not be allowed to do so.

IV. IDENTIFICATION OF PRIOR ART

Under the Scheduling Order, and subject to Defendant's reservation of rights, Defendant identifies each item of prior art that anticipates or renders obvious the Asserted Claims below.

A. Prior Art Patents and Printed Publications

1. U.S. Patent No. 10,879,727

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '727 Patent are provided in attached Exhibits A1 through A15 (collectively "Appendix A").

Patent No. or Title (Primary Inventor /Author)	Date of Issue/ Publication	Filing Date
US 2011/0068744 ("Zhu")	March 24, 2011	September 18, 2009
WO 2009/151156 ("Cheng")	December 17, 2009	June 15, 2009
US 2004/0051387 ("Lasseter II")	March 18, 2004	September 17, 2002

Patent No. or Title (Primary Inventor /Author)	Date of Issue/ Publication	Filing Date
US 2009/0216386 (“Wedel I”)	August 27, 2009	February 26, 2008
US 9,088,180 (“Wedel II”)	October 17, 2013	April 17, 2012
US 2007/0222295 (“Wareham”)	September 27, 2007	September 5, 2002
US 4,324,987 (“Sullivan”)	April 13, 1982	May 26, 1978
US 8,222,548 (“Espeut”)	July 17, 2012	July 30, 2009
US 8,415,830 (“Lim”)	April 9, 2013	June 3, 2010
US 7,015,599 (“Gull I”)	March 21, 2006	June 27, 2003
Precision Circuit Inc., <i>Power Control System 50A</i> (“Power Control System 50A”)	March 22, 2007	-
Intellitec Products, LLC., <i>100 AMP Smart Energy Management System Model 1000 Installation & Service Manual</i> (“Model 1000 Installation & Service Manual”)	January 28, 2008	-
Cummins Power Generation, Inc., <i>PowerCommand Paralleling System Digital MasterControl</i> (“MasterControl”)	2009	-

In addition, Defendant identifies—responsive to Plaintiff’s Infringement Contentions—the following patents, publications, and systems as evidence of the state of the art as it relates to transfer switches and load-shedding devices. These references include all references listed in the above table, Appendices A-C, as well as the following references:

Pub. No. or Title	Publication Date	Filing Date
US 7,149,605 B2 (“Chassin II”)	Dec. 12, 2006	June 13, 2003
US 2004/0254654 A1 (“Donnelly”)	Dec. 16, 2004	June 13, 2003
US 2002/0024332 A1 (“Gardner”)	May 10, 2005	June 7, 2001
US 2002/0190576 A1 (“Kern”)	Dec. 19, 2002	June 15, 2001
US 2010/0013308 A1 (“Lathrop I”)	Jan. 21, 2010	July 21, 2008
US 2008/0258557 A1 (“Lathrop II”)	Oct. 23, 2008	Apr. 23, 2007
US 6,172,432 B1 (“Schnackenberg”)	Jan. 9, 2001	June 18, 1996
JPH 0,591,751 A (“Shimizu”)	Apr. 8, 1993	June 6, 1991
US 6,476,519 B1 (“Weiner”)	Nov. 5, 2011	Apr. 6, 2000
Pukar Mahat et al., <i>Underfrequency Load Shedding for an Islanded Distribution System with Distributed Generators</i> ,	April 2010	N/A

Pub. No. or Title	Publication Date	Filing Date
IEEE TRANS. PWR. DEL. vol. 25, no. 2 (Apr. 2010) (“Mahat”)		

Defendant further identifies as evidence of the state art references produced at GENERAC-PA_0000001-GENERAC-PA_0017379.

2. U.S. Patent No. 10,892,618

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the ’618 Patent are provided in attached Exhibits B1 through B14 (collectively, “Appendix B”).

Patent No. or Title (Primary Inventor /Author)	Date of Issue/Publication	Filing Date
US 2010/0019574 A1 (“Baldassarre”)	January 28, 2010	May 4, 2009
US 2010/0038966 A1 (“Espeut II”)	February 18, 2010	August 30, 2009
US 2004/0262997 A1 (“Gull III”)	December 30, 2004	June 27, 2003
US 2006/0018069 A1 (“Gull IV”)	January 26, 2006	July 13, 2005
US 2007/0239372 A1 (“Schweitzer”)	Oct. 11, 2007	Oct. 16, 2010
US 4,324,987 (“Sullivan”)	April 13, 1982	May 26, 1978
US 2007/0222294 A1 (“Tsukida”)	September 27, 2007	April 9, 2004
US 2007/0222295 A1 (“Wareham”)	September 27, 2007	February 9, 2007
US 2009/0216386 A1 (“Wedel I”)	August 27, 2009	February 26, 2008

In addition, Defendant identifies—responsive to Plaintiff’s Infringement Contentions—the following patents, publications, and systems as evidence of the state of the art as it relates to transfer switches and load-shedding devices. These references include all references listed in the above table, Appendices A-C, as well as the following references:

Pub. No. or Title	Publication Date	Filing Date
US 7,149,605 B2 (“Chassin II”)	Dec. 12, 2006	June 13, 2003
US 2004/0254654 A1 (“Donnelly”)	Dec. 16, 2004	June 13, 2003
US 2002/0024332 A1 (“Gardner”)	May 10, 2005	June 7, 2001
US 2002/0190576 A1 (“Kern”)	Dec. 19, 2002	June 15, 2001
US 2010/0013308 A1 (“Lathrop I”)	Jan. 21, 2010	July 21, 2008
US 2008/0258557 A1 (“Lathrop II”)	Oct. 23, 2008	Apr. 23, 2007
US 6,172,432 B1 (“Schnackenberg”)	Jan. 9, 2001	June 18, 1996
JPH 0,591,751 A (“Shimizu”)	Apr. 8, 1993	June 6, 1991
US 6,476,519 B1 (“Weiner”)	Nov. 5, 2011	Apr. 6, 2000

Pub. No. or Title	Publication Date	Filing Date
Pukar Mahat et al., <i>Underfrequency Load Shedding for an Islanded Distribution System with Distributed Generators</i> , IEEE TRANS. PWR. DEL. vol. 25, no. 2 (Apr. 2010) (“Mahat”)	April 2010	N/A

Defendant further identifies as evidence of the state art references produced at GENERAC-PA_0000001-GENERAC-PA_0017379.

Each of these references shows that the concept of automated load shedding and sending signals using frequency was not novel or was obvious and well known in the art. In light of the references discussed herein, the Asserted Claims of the Asserted Patents cannot be valid.

3. U.S. Patent No. 11,967,857

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '857 Patent are provided in attached Exhibits C1 through C18 (collectively. “Appendix C”).

Pub. No. or Title	Publication Date	Filing Date
J.P. Pat. No. 2002/017056 (“Yokoyama I”)	Jan. 18, 2002	June 30, 2000 (Japan)
J.P. Pat. No. 4,228,380 (“Yokoyama II”)	Feb. 25, 2009	June 30, 2000 (Japan)
J.P.H. 0591751 (“Shimizu”)	Apr. 9, 1993	June 6, 1991 (Japan)
U.S. Pat. No. 9,234,246 (“Davis”)	Jan. 12, 2016	Apr. 11, 2012
Rashad M. Kamel, <i>Enhancement of Micro-Grid Dynamic Performance Subsequent to Islanding Process Using Storage Batteries</i> , 34 IRANIAN J. SCI & TECH. 605 (Oct. 2010) (“Kamel”)	Oct. 24, 2010	-
Robert H. Lasseter, <i>Smart Distribution: Coupled Microgrids</i> , 99 PROCEEDINGS OF THE IEEE 1074 (June 2011) (“Lasseter I”)	June 2011	-
U.S. Pat. Appl. No. 2004/0051387 (“Lasseter II”)	Mar. 18, 2004	Sep. 17, 2002
Nikos Hatziargyriou et al., <i>Microgrids: An Overview of Ongoing Research</i> ,	July 2007	-

Pub. No. or Title	Publication Date	Filing Date
<i>Development, and Demonstration Projects</i> , ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB. (July 2007) ("Hatziargyriou")		
U.S. Pat. Appl. Pub. No. 2008/0005044 ("Benya")	January 3, 2008	May 24, 2007
U.S. Pat. Appl. Pub. No. 2005/0012395 ("Eckroad")	Jan. 20, 2005	Dec. 5, 2003
U.S. Pat. Appl. No. 2006/0208574 ("Lasseeter III")	Sep. 21, 2006	Mar. 18, 2005
U.S. Pat. Appl. No. 2010/0019574 ("Baldassarre")	Jan. 28, 2010	May 4, 2009
U.S. Pat. No. 7,275,975 ("Miller")	Sep. 25, 2007	June 6, 2005
U.S. Pat. Appl. No. 2007/0222294 ("Tsukida")	Sep. 27, 2007	Apr. 9, 2004
U.S. Appl. Pub. No. 2009/0216386 ("Wedel I")	Aug. 27, 2009	Feb. 26, 2008
J.A. Pecos Lopes et al., <i>Defining Control Strategies for MicroGrids Islanded Operation</i> , 21 IEEE TRANSACTIONS ON POWER SYSTEMS 916 (May 2006) ("Lopes I")	May 2006	-

In addition, Defendant identifies—responsive to Plaintiff's Infringement Contentions—the following patents, publications, and systems as evidence of the state of the art as it relates to overload and load-shedding devices. These references include all references listed in the above table, Appendices A-C, as well as the following references:

Pub. No. or Title	Publication Date	Filing Date
US 2010/0013308 A1 ("Lathrop I")	Jan. 21, 2010	July 21, 2008
US 2008/0258557 A1 ("Lathrop II")	Oct. 23, 2008	Apr. 23, 2007
US 6,172,432 B1 ("Schnackenberg")	Jan. 9, 2001	June 18, 1996
US 2004/0254654 A1 ("Donnelly")	Dec. 16, 2004	June 13, 2003
Alexander Kusko & Marc T. Thompson, POWER QUALITY IN ELECTRICAL SYSTEMS (2007) ("Kusko")	2007	-
NFPA, STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS (2010 ed.) ("NFPA")	2010	-
U.S. Patent No. 7,149,605 ("Chassin")	Dec. 12, 2006	June 13, 2003
I. Serban et al., <i>Frequency Control Issues in Microgrids with Renewable Energy</i>	May 12, 2011	-

Pub. No. or Title	Publication Date	Filing Date
<i>Sources</i> , 7 TH INT’L SYMPOSIUM ADVANCED TOPICS ELEC. ENG. (May 12, 2011) (“Serban”)		
Robert Lasseter, <i>Providing Premium Power Through Distributed Resources</i> , PROCEEDINGS OF THE 33RD ANNUAL HAWAII INTERNATIONAL CONFERENCE ON SYSTEM SCIS. (Jan. 2000) (“Lasseter IV”)	Jan. 2000	-
Carlos Coelho Leal Moreira, <i>Identification and Development of MicroGrids Emergency Control Procedures</i> , DISSERTATION UNIVERSIDADE DO PORTO (July 2008) (“Moreira”)	July 2008	-

Defendant further identifies as evidence of the state art references produced at GENERAC-PA_0000001-GENERAC-PA_0017379.

Each of these references shows that the concept of automated load shedding and sending signals using frequency was not novel or was obvious and well known in the art. In light of the references discussed herein, the Asserted Claims of the Asserted Patents cannot be valid.

B. Prior Art Systems and Devices

The following systems were known, publicly used, sold, or offered for sale prior to the Asserted Patents. Each prior art system was on sale or publicly available at least as early as the date provided, but discovery may reveal even earlier sale or public availability.

Discovery is ongoing, and Defendant reserves the right to update the below lists of disclosed systems. Indeed, the below lists of disclosed systems identify systems based on representative products and/or public documentation available to Defendant at this early stage of discovery. But pointing to a representative system (e.g., from a particular year, or a particular size, etc.), Defendant does not limit its disclosure. The systems identified below and any associated charts should be construed as representative systems of those being disclosed by Defendant.

1. '727 Patent

Ex.	System	Date of Sale or Public Availability	Seller or Manufacturer Making Information Available and to Whom	Short Title
A8	Power Control System	At least by March 22, 2007	Precision Circuit Inc	Power Control System
A10	Smart Energy Management System	At least by January 28, 2008	Intellitec Products, LLC.	Smart Energy Management System
A4	Generac PowerManager, Generator/Power Source, and Transfer Switch Products ⁴	Before the '727 Patent's critical date.	Generac Power Systems, Inc.	Generac Prior Art
TBD	Cummins Power Generation Products ⁵	Before the '857 Patent's critical date.	Cummins, Inc.	Cummins Prior Art
A9	PowerCommand Paralleling System Digital MasterControl	Before the '727 Patent's critical date—at least 2009.	Cummins, Inc.	PowerCommand Digital Master Control
TBD	Quattro Inverter Series	Before the '857 Patent's critical	On information and belief, Victron Energy	Quattro

⁴ Generac Prior Art include Generac's Modular Power Systems (including Modular Power Systems Series, Modular Power System, and MPS Gensets), Gemini, the Bi-Fuel Series, the Guardian Series, the Quietsource Series, and the QT Series; Generac's transfer-switch families, including the RTS Series, RTSS Load Shed Automatic Transfer Switch Series, GTS Switches, MTS Switches, HTS Switches, GenReady Load Center, Nexus LTS, Nexus Smart Switch, DLM Load Control Modules, the Generac DLM Load Shed Module, GenLink-DCP, and Load Shedding Transfer Switches; and Generac's PowerManager control families, including the PowerManager Control Systems and PowerManager models (H-100, G-100, G-200, G-200SC), plus System Controller units (System Controller, PM-DCP, PM-SC, PM-PC). Generac Prior Art also includes all accused products that were publicly available (on sale or otherwise) before the Asserted Patents' critical date.

⁵ The Cummins Prior Art systems include at least, e.g., Onan Generators, Camp Power Generators, Onan Energy Command, Quiet Diesel (including 5500, 7500, and 12500), PowerCommand Paralleling System Digital MasterControl, PowerCommand Control Series (including 3100, DFBE, DFCE, DFCC, DFCE), PowerCommand Human Machine Interface (including HMI320), PowerCommand Genset (including FT-10), CCM-G, CCM-T, PCC Series Gensets, Non-PowerCommand ATS, AmpSentry, Automatic Transfer Switches (ATS).

		date—at least 2008.		
TBD	Phoenix MultiPlus Inverter Series	Before the '857 Patent's critical date.	On information and belief, Victron Energy	Phoenix

For each of the prior art devices identified above, Defendant has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Defendant has obtained or is in the process of attempting to obtain the identified devices and will make them available for inspection to the extent they are obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Defendant is actively searching for information regarding at least the systems, devices, and/or inventions listed above.

Discovery is ongoing, and Defendant may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Defendant reserves the right to supplement these contentions accordingly. Defendant continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Defendant's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and

belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the Asserted Patents. Defendant's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third-party prior art systems anticipate or render obvious any of the Asserted Claims of the Asserted Patents. As such, Defendants reserve all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the Asserted Patents. Defendant has obtained, and are in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Defendant reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Defendant reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Defendants will make all such devices, software programs, or other products in Defendants' possession, custody, or control available for inspection by Plaintiff.

Consequently, Defendants reserve the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Defendants identify, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed above as evidence of the state of the art as it relates to each of the Asserted Patents.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '727 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Defendants have not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Defendants reserve the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

2. '618 Patent

Appx.	System	Date of Sale or Public Availability	Seller or Manufacturer Making Information Available and to Whom	Short Title
B5 ⁶	Generac Power System Products ⁷	Before the '618 Patent's critical date.	Generac Power Systems, Inc.	Generac Prior Art

⁶ Defendant also identifies the documents used in its exemplary chart as documentary prior art references, but it only lists them here for concision and not in Section IV.A.3.

⁷ Generac Prior Art include Generac's Modular Power Systems (including Modular Power Systems Series, Modular Power System, and MPS Gensets), Gemini, the Bi-Fuel Series, the

B3 ⁸	Cummins Power Generation Products ⁹	Before the '618 Patent's critical date.	Cummins, Inc.	Cummins Prior Art
B9 ¹⁰	Precision Circuits Products ¹¹	Before the '618 Patent's critical date.	Precision Circuits Inc.	PC Prior Art
B8 ¹²	Intellitec Power Management Products ¹³	Before the '618 Patent's critical date.	Intellitec Prods., LLC	Intellitec Prior Art

For each of the prior art devices identified above, Defendant has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Defendant has obtained or is in the process of

Guardian Series, the Quietsource Series, and the QT Series; Generac's transfer-switch families, including the RTS Series, RTSS Load Shed Automatic Transfer Switch Series, GTS Switches, MTS Switches, HTS Switches, GenReady Load Center, Nexus LTS, Nexus Smart Switch, DLM Load Control Modules, the Generac DLM Load Shed Module, GenLink-DCP, and Load Shedding Transfer Switches; and Generac's PowerManager control families, including the PowerManager Control Systems and PowerManager models (H-100, G-100, G-200, G-200SC), plus System Controller units (System Controller, PM-DCP, PM-SC, PM-PC). Generac Prior Art also includes all accused products that were publicly available (on sale or otherwise) before the Asserted Patents' critical date.

⁸ Defendant also identifies the documents used in its exemplary chart as documentary prior art references, but it only lists them here for concision and not in Section IV.A.3.

⁹ The Cummins Prior Art systems include at least, *e.g.*, Onan Generators, Camp Power Generators, Onan Energy Command, Quiet Diesel (including 5500, 7500, and 12500), PowerCommand Paralleling System Digital MasterControl, PowerCommand Control Series (including 3100, DFBF, DFCB, DFCC, DFCE), PowerCommand Human Machine Interface (including HMI320), PowerCommand Genset (including FT-10), CCM-G, CCM-T, PCC Series Gensets, Non-PowerCommand ATS, AmpSentry, Automatic Transfer Switches (ATS).

¹⁰ Defendant also identifies the documents used in its exemplary chart as documentary prior art references, but it only lists them here for concision and not in Section IV.A.3.

¹¹ The PC Prior Art systems include at least, *e.g.*, Mini Power Control System, Mini-PCS I/O Module (including w/ Vertical Terminals and w/Right Angle Screw Terminals), Mini-PCS Display Panel (including 3 Loads, 4 Loads, and Amp Meter 4 Loads), Power Control System (PCS).

¹² Defendant also identifies the documents used in its exemplary chart as documentary prior art references, but it only lists them here for concision and not in Section IV.A.3.

¹³ The Intellitec Prior Art systems include at least, *e.g.*, 30A Smart Energy Management System (including Model 500), 50 Amp Smart Energy Management System (including Model 700, Model 900), 100 Amp Smart Energy Management System (including Model 1000), Smart Energy Management System (including Model 600), Powerline 2004 Energy Management System.

attempting to obtain the identified devices and will make them available for inspection to the extent they are obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Defendant is actively searching for information regarding at least the systems, devices, and/or inventions listed above.

Discovery is ongoing, and Defendant may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Defendant reserves the right to supplement these contentions accordingly. Defendant continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Defendant's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the Asserted Patents. Defendant's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the

third-party prior art systems anticipate or render obvious any of the Asserted Claims of the Asserted Patents. As such, Defendants reserve all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the Asserted Patents. Defendant has obtained, and are in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Defendant reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Defendant reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Defendants will make all such devices, software programs, or other products in Defendants' possession, custody, or control available for inspection by Plaintiff.

Consequently, Defendants reserve the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Defendants identify, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed above as evidence of the state of the art as it relates to each of the Asserted Patents.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '618 Patent to which it is applied

for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Defendants have not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Defendants reserve the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

3. '857 Patent

Ex.	System	Date of Sale or Public Availability	Seller or Manufacturer Making Information Available and to Whom	Short Title
C6 ¹⁴	Generac PowerManager, Generator/Power Source, and Transfer Switch, Products ¹⁵	Before the '857 Patent's critical date.	Generac Systems, Inc. Power	Generac Prior Art

¹⁴ Defendant also identifies the documents used in its exemplary chart as documentary prior art references, but it only lists them here for concision and not in Section IV.A.3.

¹⁵ Generac Prior Art include Generac's Modular Power Systems (including Modular Power Systems Series, Modular Power System, and MPS Gensets), Gemini, the Bi-Fuel Series, the Guardian Series, the QuietSource Series, and the QT Series; Generac's transfer-switch families, including the RTS Series, RTSS Load Shed Automatic Transfer Switch Series, GTS Switches, MTS Switches, HTS Switches, GenReady Load Center, Nexus LTS, Nexus Smart Switch, DLM Load Control Modules, the Generac DLM Load Shed Module, GenLink-DCP, and Load Shedding Transfer Switches; and Generac's PowerManager control families, including the PowerManager Control Systems and PowerManager models (H-100, G-100, G-200, G-200SC), plus System Controller units (System Controller, PM-DCP, PM-SC, PM-PC). Generac Prior Art also includes all accused products that were publicly available (on sale or otherwise) before the Asserted Patents' critical date.

C15 ¹⁶	Sunny Island Inverters	On information and belief, before the '857 Patent's critical date—at least by 2007.	On information and belief, SMA America and/or SMA Solar Technology AG	Sunny Island
TBD	CERTS Microgrid Concept Test Bed	On information and belief, before the '857 Patent's critical date—at least by 2009.	On information and belief, the Consortium for Electric Reliability Technology Solutions; Robert H. Lasseter	CERTS
TBD	Quattro Inverter Series	Before the '857 Patent's critical date—at least 2008.	On information and belief, Victron Energy	Quattro
TBD	Phoenix MultiPlus Inverter Series	Before the '857 Patent's critical date.	On information and belief, Victron Energy	Phoenix
TBD	Smart Energy Management System	At least by January 28, 2008	Intellitec Products, LLC.	Smart Energy Management System
TBD	Cummins Power Generation Products ¹⁷	Before the '857 Patent's critical date.	Cummins, Inc.	Cummins Prior Art
TBD	PowerCommand Paralleling System Digital MasterControl	Before the '857 Patent's critical date—at least 2009.	Cummins, Inc.	PowerCommand Digital Master Control

¹⁶ Defendant also identifies the documents used in its exemplary chart as documentary prior art references, but it only lists them here for concision and not in Section IV.A.3.

¹⁷ The Cummins Prior Art systems include at least, *e.g.*, Onan Generators, Camp Power Generators, Onan Energy Command, Quiet Diesel (including 5500, 7500, and 12500), PowerCommand Paralleling System Digital MasterControl, PowerCommand Control Series (including 3100, DFBF, DFCB, DFCC, DFCE), PowerCommand Human Machine Interface (including HMI320), PowerCommand Genset (including FT-10), CCM-G, CCM-T, PCC Series Gensets, Non-PowerCommand ATS, AmpSentry, Automatic Transfer Switches (ATS).

TBD	Intellitec Power Management Products ¹⁸	Before the '857 Patent's critical date.	Intellitec Prods., LLC	Intellitec Prior Art
TBD	Precision Circuits Products ¹⁹	Before the '857 Patent's critical date.	Precision Circuits Inc.	PC Prior Art

For each of the prior art devices identified above, Defendant has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Defendant has obtained or is in the process of attempting to obtain the identified devices and will make them available for inspection to the extent they are obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Defendant is actively searching for information regarding at least the systems, devices, and/or inventions listed above.

Discovery is ongoing, and Defendant may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Defendant reserves the right to supplement these contentions accordingly. Defendant continues to investigate each of the identified devices, including through potential discovery needed to be

¹⁸ The Intellitec Prior Art systems include at least, *e.g.*, 30A Smart Energy Management System (including Model 500), 50 Amp Smart Energy Management System (including Model 700, Model 900), 100 Amp Smart Energy Management System (including Model 1000), Smart Energy Management System (including Model 600), Powerline 2004 Energy Management System.

¹⁹ The PC Prior Art systems include at least, *e.g.*, Mini Power Control System, Mini-PCS I/O Module (including w/ Vertical Terminals and w/Right Angle Screw Terminals), Mini-PCS Display Panel (including 3 Loads, 4 Loads, and Amp Meter 4 Loads), Power Control System (PCS).

obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Defendant's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the Asserted Patents. Defendant's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third-party prior art systems anticipate or render obvious any of the Asserted Claims of the Asserted Patents. As such, Defendants reserve all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the Asserted Patents. Defendant has obtained, and are in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Defendant reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Defendant reserves the right to modify, amend, or

supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Defendants will make all such devices, software programs, or other products in Defendants' possession, custody, or control available for inspection by Plaintiff.

Consequently, Defendants reserve the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Defendants identify, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed above as evidence of the state of the art as it relates to each of the Asserted Patents.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '857 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Defendants have not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Defendants reserve the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

C. Applicant Admitted Prior Art

The following exhibits identify the Applicant Admitted Prior Art ("AAPA") that the inventor of the Asserted Patents admits was known, publicly used, sold, or offered for sale prior to the Asserted Patents.

Ex.	Asserted Patent
A1	'727 Patent
B1	'618 Patent
C1	'857 Patent

V. INVALIDITY GROUNDS

Defendant contends that certain prior art references below anticipate one or more Asserted Claims and that to the extent the identified prior art references do not anticipate the Asserted Claims, those claims are invalid as obvious under 35 U.S.C. § 103. Each anticipatory prior art reference, either alone or in combination with other prior art, also renders the Asserted Claims invalid as obvious. In particular, each anticipatory prior art reference may be combined with (1) information generally known to persons skilled in the art at the time of the alleged invention, or (2) any of the other anticipatory prior art references. To the extent that Plaintiff contends that any of the anticipatory prior art fails to disclose one or more limitations of the Asserted Claims, Defendant contends that any difference between the reference and the corresponding patent claims would have been obvious to one of ordinary skill in the art. Thus, all anticipation charts should be interpreted as both reflecting anticipation by the reference and invalidity due to single reference obviousness, to the extent that Plaintiff contends that any limitation is missing.

A. Anticipation

As stated above, Defendant incorporates by reference all other Invalidity Contentions related to the Asserted Patents served on or otherwise provided to Plaintiff, whether past or future. Moreover, prior art references anticipating the Asserted Claims are provided below. The prior art listed below anticipates the Asserted Claims under the proper construction of the claims or under Plaintiff's apparent interpretation of the claims as set forth by Plaintiff in its Complaint and Infringement Contentions.

Here, the Asserted Claims of the Asserted Patents are anticipated or rendered obvious by prior art. Defendant identifies the prior art references that anticipate or render obvious the Asserted Patents Asserted Claims in the claim charts of Appendices A-C which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendices A-C provide an explanation showing how these prior art references teach or suggest each and every element of the Asserted Claims. For each reference or combination of references suggested by each chart, Defendant indicates whether the prior art renders the claim anticipated or obvious.

In addition to contending that the Asserted Patents' Asserted Claims are invalid in view of the prior art references cited in the claim charts of Appendices A-C, Defendant further contends that the Asserted Patents' Asserted Claims are invalid as anticipated or obvious under pre-AIA U.S.C. §§ 102(a), (b), (e), (g), and 103 in view of public knowledge and uses or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Defendant continues to investigate these items and reserves the right to amend or supplement these contentions to include additional information or documents regarding such products or systems.

Defendant's reference to a particular device or product in the claim charts of Appendices A-C should be interpreted as a reference to the device or product itself and any corresponding patents, publications, or product literature cited in Appendices A-C that relates to the cited device or product. In addition, Defendant may rely on other documents or things that have not yet been located to support its contentions regarding such prior art device(s), circuit(s), or product(s) that are referenced in the charts.

Defendant incorporates by reference, as if set forth fully herein, all prior art cited during the prosecution of the Asserted Patents, all prior art as described in any future *inter partes* review

proceedings of the Asserted Patents, and all prior art disclosed during previous litigation proceedings involving the Asserted Patents.

Defendant further identifies and incorporates by reference as if set forth fully herein the prior art references and Invalidity Contentions as described in any other PSLC proceedings where Invalidity Contentions have been, or will be, provided regarding the Asserted Patents, its foreign counterparts, or any parent or child patent of the Asserted Patents. Defendant reserves the right to use any portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Defendant identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure or other material, the identification should be understood to include the referenced figure or other material as well. It should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Defendant therefore reserves the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Defendant also reserves the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. If an element of any Asserted Claims are not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendices A–C.

B. Obviousness

Based on presently known information and the apparent constructions Plaintiff is asserting in its Infringement Contentions, the prior art references identified above anticipate the Asserted Claims or (alone or in combination with the knowledge in the art) render the Asserted Claims obvious. To the extent Plaintiff asserts that any of the prior art references charted in the attached Appendices fail to explicitly or inherently disclose any element of the Asserted Claims, Defendant contends that it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, or in combination with any of the other prior art references. A single prior art reference can establish obviousness where the differences between the disclosures within the reference and the claimed invention would have been obvious to one of ordinary skill in the art. For instance, “[c]ombining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness.” *Boston Sci. Scimed, Inc. v. Cordis Corp.*, 554 F. 3d 982, 991 (Fed. Cir. 2009).

Defendant reserves the right to rely upon combinations disclosed within the prosecution history of the references cited herein, and hereby expressly incorporate by reference any statements and reasons set forth by the examiners during prosecution of the Asserted Patents and related patent applications as to why it would have been obvious to modify or combine references to achieve the limitations of the Asserted Claims. Defendant further reserves the right to rely on additional prior art references to show the state and evolution of technology at the time of the alleged invention and that may be relevant to the validity of the Asserted Claims depending on the claim construction, infringement, and other positions taken by Plaintiff.

Much of the art identified in the attached Appendices reflects common knowledge and the state of the art at the time of alleged priority dates of the Asserted Patents. Defendant may rely on additional citations, references, expert testimony, and other material to provide context or to aid in understanding the cited portions of the references or cited features of the systems. Defendant may also rely on expert testimony explaining relevant portions of references, relevant systems, and other discovery regarding relevant subject matter. Additionally, Defendant may rely on other portions of any prior art reference for purposes of explaining the background and general technical subject area of the reference.

Where an individual reference is cited with respect to fewer than all elements of an Asserted Claims, Defendant contends that the reference renders obvious the claim under 35 U.S.C. § 103(a) in view of each other reference and combination of references that discloses the remaining claim element(s), as shown in the Appendices submitted herewith.

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17 (1966)) (cleaned up). Defendant reserves the right to rely on any references or assertions identified herein in connection with Defendant's contention that each of the Asserted Claims are invalid under 35 U.S.C. § 103 and to rely upon expert testimony addressing such references and assertions.

Many of the references cited in the Appendices cite or relate to additional references or products, systems, or services. Defendant may rely on such additional references and copies or exemplars of such products or systems. Defendant may also rely on the disclosures of the references cited or discussed during the prosecutions of the Asserted Patents or the assertions presented regarding those references.

Each prior art reference may be combined with one or more other prior art references to render obvious the Asserted Claims in combination. The disclosures of these references also may be combined with information known to persons skilled in the art at the time of the alleged inventions and understood and supplemented in view of the common sense of persons skilled in the art at the time of alleged inventions, including any statements in the intrinsic record of the Asserted Patents and related applications.

A person of ordinary skill in the art would have been motivated to combine the prior art references in the attached Appendices based on the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. The identified prior art references within each Appendix address the same or similar technical issues and suggest the same or similar solutions to those issues at the Asserted Claims. On an element-by-element basis, Defendant expressly intends to combine one or more prior art items identified with each other to address any contentions from Plaintiff that a particular prior art item supposedly lacks one

or more elements of the Asserted Claims. In other words, Defendant contends that each charted prior art item can be combined with other charted prior art items when a particular prior art item lacks or does not explicitly disclose an element or feature of an Asserted Claims. The suggested obviousness combinations described below are not to be construed to suggest that any reference included in the combinations is not anticipatory. Further, to the extent Plaintiff contends that any of the anticipatory prior art fails to disclose one or more limitations of the Asserted Claims, Defendant reserves the right to identify other prior art references that, when combined with the anticipatory prior art, would render the claims obvious despite an allegedly missing limitation. Defendant will further specify the motivations to combine the prior art, including through reliance on expert testimony, at the appropriate later stage of this litigation.

A person of ordinary skill in the art would have been motivated to combine the prior art items identified. As the Supreme Court held in *KSR International Company v. Teleflex, Inc.*, “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” 550 U.S. 398, 416 (2007). The Supreme Court also held that,

[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 417.

Moreover, “in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420. It is sufficient that a combination of elements was “obvious to try,” as the Supreme Court recognized in holding that

[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. . . . In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

Id. Finally, the Supreme Court recognized that “[g]ranting patent protection to advances that would occur in the ordinary course without real innovation retards progress and may, in the case of patents combining previously known elements, deprive prior inventions of their value or utility.” *Id.* at 419. All of the following rationales recognized in *KSR* support a finding of obviousness:

1. Combining prior art elements according to known methods to yield predictable results;
2. Simple substitution of one known element for another to obtain predictable results;
3. Use of known techniques to improve similar devices (methods or products) in the same way;
4. Applying a known technique to a known device (method or product) ready for improvement to yield predictable results;
5. “Obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
6. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; and
7. Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Defendant further contends that the prior art identified is evidence of simultaneous or near-simultaneous independent invention by others of the alleged invention as recited in the Asserted Claims. Defendant reserves the right to rely on the simultaneous or near-simultaneous independent invention by others as further evidence of the obviousness of the Asserted Claims.

Each limitation of the Asserted Claims was well-known to those of ordinary skill in the art before the alleged priority dates of the Asserted Patents, as detailed below and in the attached Appendices. The elements recited in the Asserted Claims are mere combinations and modifications of these well-known elements. A person of ordinary skill in the art would have been able and motivated to improve the existing technology in the same or similar manner by combining or modifying the individual elements that were already known in the art to yield predictable results.

Defendant believes that no showing of a specific motivation to combine the identified prior art references described herein and in the attached charts is required, as each combination of art would have no unexpected results and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 550 U.S. at 414–18 (rejecting the Federal Circuit’s “rigid” application of the teaching, suggestion, or motivation to combine test, instead espousing an “expansive and flexible” approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 421. Nevertheless, in addition to the information contained in this section and elsewhere in these contentions, Defendant identifies additional motivations and reasons to combine the cited art.

Subject to the foregoing, Defendant identifies the following exemplary reasons that skilled artisans would have combined elements of the prior art to render obvious the Asserted Claims. The fact that others are not discussed more specifically should not be interpreted as an admission or concession that it does not apply. To the contrary, the discussion below simply provides more explanation of these specific rationales.

Here, these patents are in the field of managing power sources, such as a municipal power grid, backup power generator or solar panel, '727 Patent at Abstract, or focusing on the loads (i.e., devices) being powered, *id.* at 2:28–30. A power source can only supply power for so many loads because it “has a maximum load handling capability dictated by the power generation and delivery path . . . or a maximum output.” *Id.* at 2:4–27. In an electrical power system, power is related to the electrical voltage provided and the current drawn. To calculate the individual loads on a power source, it is “understood that for most devices the voltage applied from the [power source] is substantially constant.” *Id.* at 4:55–58. Consequently, the current drawn by the device is directly correlated to the load on the power source. *Id.*

The patents explain the inventor’s goal: that “there is a need to determine and control which and how many loads are connected in order that the total of the loads does not create an overload.” ’727 Patent at 2:13–15. “Overloads are generally undesirable in that they may cause deviation from power output specifications, loss of power, damage or combinations thereof.” *Id.* at 2:15–19. Previously, people solved this overloading problem by employing a “well known” method called “load shedding,” *id.* at 6:1–2, which refers to “prior art systems which detect when a generator is in an overload condition and switch off [i.e., ‘shed’] loads,” *id.* at 5:66–67. For example, some automated load manager systems for electrical power sensed a condition where the power frequency drops from the standard 60 Hz, indicating an overload. *Id.* at 6:9–25, 6:38–50. But, “[i]mportantly[,] load shedding takes place when the load is connected and overload detected.” *Id.* at 6:6–7. That is, load shedding in this system “takes place *after* the overload happens.” *Id.* at 6:49–50 (emphasis added).

The patentee desired to shed loads *before* overloading. *Id.* at 8:57–59. He aimed to “prevent overloading of the power source by preventing a load which would otherwise immediately cause

or which could lead to a future overload from being connected or alternatively by restricting the power supplied.” *Id.* at 8:61–65. This approach to proactive load shedding was admittedly not new, however. It was previously manually done:

Often generators are intentionally designed to only provide power to handle a part of the total load, and the occupants of the house must remember not to turn on certain large loads, for example the air conditioner and oven, which would cause an overload. In addition, if those large loads are on at the time when power is lost, the occupants must quickly turn them off before the generator is started and transfer switch moved to prevent an overload. This all presents a substantial possibility of generator damage resulting from human error.

Id. at 17:34–43.

The patentee chose to accomplish this instead through *automated* “connection and disconnection of individual loads,” *id.* at 8:66–9:1, so “that the total load on any one power source is kept at or below the maximum output capability of that power source,” *id.* at 9:62–64. The solution would “sense” and use the “conditions which affect that maximum available output power” with information about the power source “to determine precisely what that maximum available output power is at a given time, what the expected available power will be at one or more times in the future as well as the present and future effect the connection of a particular load may have on available power.” *Id.* at 9:9–17.

Although the patentee described primarily embodiments for electrical generator systems, his idea of automated load management was not limited to any particular technological environment. *Id.* at 2:44–59. He explained that his “inventive concepts” could be “utilized for many types of power systems, including but not limited to hydraulic, fluid or gaseous heating, mechanical, thermal, solar, wind, liquid fuel, gas fuel, solid fuel and combinations thereof.” *Id.* One of ordinary skill would recognize that “well known correlations” between various systems could be used to apply the invention to many forms of power sources. *Id.*

The below sub-sections explain exemplary, patent-specific reasons that the alleged inventions are obvious.

(a) '727 Patent

The '727 Patent relates to a “method and apparatus for controlling the load presented to one or more power sources such as a power grid, backup power generator or solar panel is described.” '727 Patent at Abstract. In the '727 Patent, “[b]y selectively connecting, disconnecting, limiting and controlling various loads which are powered, the power grid service connection and power sources may be economically sized and operated while allowing reliability and convenience in selecting and powering loads.” *Id.* This “control of the loads connected to the power sources is prioritized by various parameters including the power source operation parameters.” *Id.* Controlling the loads in this manner “may also operate to facilitate transfer of power from one power source or load to another power source or load.” *Id.*

As admitted by the '727 Patent and disclosed in the prior art, controlling power provided from multiple power sources to a group of loads was well known. *See, e.g., id.* at 1:32-60. Moreover, it was well known to use a transfer switch to switch between a power grid and a generator to power a group of loads based on whether the power grid operates at an acceptable voltage. *See, e.g., id.* at 14:44-50. Finally, timely monitoring the current provided to loads to prevent exceeding the maximum current capacity of the generator powering them was well known. *See, e.g., id.* at 23:13-44.

The identified references are in the same or similar technical fields, address the same technical issues, and suggest similar solutions. Indeed, the need for proactively monitoring the current provided to loads to prevent overload, *id.* at 2:11-23, was already recognized in the prior art and the field of the invention and would have provided a person of ordinary skill in the art motivation to combine the prior art references identified as to this patent.

For example, Cheng, entitled “A stand-alone power system by using a flywheel induction motor,” discloses a “circuit configuration for improving an overload capability of a stand-alone power system comprising a power source and a power-side inverter by applying a frequency control to the power-side inverter.” Cheng at Abstract. To prevent overloading the power source, “[w]hen the overload mode is about to occur, the control network...sends a signal to decrease the power-side inverter's output frequency. Then, the flywheel induction motor may respond to the frequency change by generating electricity power to the inverter-controlled load.” *Id.* ¶ [0022]. This results in “decreasing the power-side inverter’s output frequency below the flywheel’s speed,” thus preventing the maximum current capacity of the inverter from being exceeded. *Id.*

As another example, Lasseter II, entitled “Control of small distributed energy resources,” similarly identifies a need for inverters to “respond effectively to load changes without requiring data from other sources.” Lasseter II at Abstract. Lasseter II specifies that “[t]o prevent overloading the inverter and the microsources, load changes are taken up by the inverter in a predetermined manner, without communication.” Lasseter II further notes that when a source is in danger of being overloaded, “the System moves from grid-connected to island operation by the tripping of Switch S (FIG. 7) in response to supply problems.” *Id.* at [0055].

A further example, Espeut, entitled “Automatic transfer switch,” discloses an “automatic transfer switch apparatus [that] is configured to sense a utility line failure, start up and stabilize the generator, and switch over the household circuits from the utility to the generator, and switch back when the utility recovers.” Espeut at Abstract. Espeut describes monitoring for “a current draw which is in excess of the allowed current draw.” *Id.* at 18:19-20. To do so, “the control module will calculate the load current relative to the generator size.” *Id.* at 20:7-9. Espeut further describes “a situation arises in which the total demand from the base load alone exceeds the

aforementioned preselected percentage (e.g., 85%) of generator power, and/or the combination of base load demand and any potential load shed load exceeds the preselected percentage, then load shed operation is not possible, the ATS may be programmed, as a default operation to prevent overload and damage to the auxiliary power source, to transfer back to connection to utility power.” *Id.* at 20:48-59. Ultimately, “[t]he control module may be suitably programmed to thereafter periodically check the total demands requested by base and load shed loads and if load shed operations become possible, a transfer back to auxiliary power operations may be provided for.” *Id.* at 20:59-62.

Additional references similarly discuss the same identified problem and similar solutions:

- The Sullivan reference discloses a “System and method for optimizing shed/restore operations for electrical loads.” To obtain this, Sullivan describes a “system for controlling electrical load shedding and restoring operations includes a microprocessor system, a power measuring circuit, and a plurality of load switching relays controlled by the microprocessor system to electrically connect controlled loads of a residence to, and electrically disconnect the controlled loads from, a power line in accordance with priorities associated with the controlled loads.” Sullivan at Abstract. Sullivan explains that “[w]hen the current in the power bus exceeds the predetermined peak demand, the logic of the microprocessor generates signals which control current interrupters which are in series electrical connection with the loads. The computer logic is programmed to activate the power interrupters so as to shed the loads in a predetermined sequence when the total current in the power bus exceeds the predetermined peak demand. After shedding sufficient loads to reduce the actual current in the power bus to a point equal to or less than the predetermined peak total, the logic then determines whether any of the loads which have been shed can be restored to operation without exceeding the predetermined peak demand. If so, that load is automatically restored to operational status.” *Id.* at 5:35-52.
- The Wedel II reference discloses “[a] load management apparatus for use with an electrical system being powered by an electrical generator selectively [that] adds and sheds loads on the electrical generator to prevent overloading of the electrical generator.” Wedel at Abstract. “The load management apparatus learns the load profile for each load during a learning mode and executes one or more load shed processes to control which electrical loads are loading the electrical generator.” *Id.* at 3:41-46. “Additionally, the controller is programmed to add or shed electrical loads so that the preset overload value is not exceeded and the total loading on the electrical generator is substantially at a preset efficiency value. .” *Id.* at 3:8-11.

- The Wareham reference seeks to “promonitor[] the load feedback data and other operational parameters for selectively switching load control switches to the open circuit state to ensure that the total load demanded does not exceed the demand limits imposed by the power source.” Wareham at Abstract. “The system can ensure that an alternate power source, such as a standby generator set, is never overloaded, and ensures the user statistically attains the maximum possible convenience from the power source available.” *Id.* at Abstract. Within this solution, “the heat generated by each light-emitting diode chip mounted on the wiring structure is quickly dissipated to the outside by the metal plate.” *Id.* ¶ [0028]. To facilitate this, “[t]he AC voltage and current signals are converted the DC signals that represent the average voltage and current values supplied to the load device. These DC signal are read by the A/D ports of the remote I/O signal processor and stored in internal memory where they are read by the main system controller via the data network connection.” *Id.* ¶ [0052].
- The Zhu reference discloses an “System and method for battery cell balancing” which is nearly identical to the ’727 Patent’s power system. In Zhu, as in the ’727 Patent, the system “switches from supplying power to the connected device from the power source to supplying power to the connected device from the battery.” Zhu ¶ [0018]. This is done when “[t]he controller determines whether the AC power available from the filter/surge protector is within predetermined tolerances and, if so, controls the transfer switch to provide the AC power from the filter/surge protector to the outlet. If the AC power from the rectifier is not within the predetermined tolerances, which may occur because of ‘brown out,’ ‘high line,’ or ‘black out’ conditions, or due to power surges, then the controller controls the transfer switch to provide the AC power from the inverter.” *Id.* ¶ [0043]. Zhu explains that “the system may maintain a sufficient level of power in its battery using a charging unit, which obtains power from the power source.” *Id.* ¶ [0017].
- The Lathrop I reference discloses “[c] Lathrop I at [0009]. “It is also known to only allow the air conditioner to start if there is a certain percentage of power available from the generator. For example, upon sensing that a thermostat input to start the air conditioner is active, and if the generator output is below 80% of its maximum power output, then a corresponding control allows the air conditioner to start. However, if the generator power output is greater than or equal to 80% of its maximum power output, then the air conditioner is not allowed to start. This may cause other loads to be shed, in order to cause the generator power output to be less than 80% of its maximum power output and, thus, allow the air conditioner to be started. Also, the locked rotor currents of air conditioners are known to vary from brand-to-brand and from size-to-size. Thus, generator power available for shed loads might not be utilized.” *Id.* ¶ [0013].
- The Lathrop II references discloses “Referring to FIG. 1, a loadcenter installation 1000 to selectively provide electrical power to non-critical and critical loads (e.g., non-critical loads 218-219 and critical loads 228-229 depicted in FIG. 1) from multiple alternate sources incorporates generator power sources 215 and 225, and a loadcenter 1100 distributing electric power, at various times, from one or both of

the generator power sources 215 and 225, or from a utility power source (e.g., utility power source 201 depicted in FIG. 1) to one or more non-critical and critical loads. As will be explained, the loadcenter 1100 normally distributes power received from the utility power source 201, unless the utility power source 201 becomes unacceptable, in which case, the loadcenter 1100 distributes power from one or both of the generator power sources 215 and 225. The non-critical loads 218-219 and the critical loads 228-229 represent one or more electrical devices within, for example, a commercial or residential structure (not shown) that require electric power, such as for example and without limitation, lighting, plug-ins, appliances, commercial machinery and climate control systems. The critical loads 228-229 differ from the non-critical loads 218-219 in that the critical loads 228-229 are given priority in the distribution of power where there is insufficient power to supply both the non-critical loads 218-219 and the critical loads 228-229. The utility power source 201 is a source of electric power from a commercial vendor (e.g., without limitation, a connection to an electrical grid maintained by a utility power company).” Lathrop II ¶ [0020]. “During such normal operation in which the utility power source 201 supplies power to both of the distribution panels 110 and 120, the controller 190 may also be provided with the ability to implement one or more requirements of a safety standard, such as and without limitation, Article 702 of the 2008 National Electric Code promulgated by National Fire Protection Association. More specifically, the controller 190 may signal one or more of the load breakers 118-119 and/or 128-129 to shed one or more of the non-critical loads 218-219 and/or one or more of the critical loads 228-229 in response to detecting a possible unsafe condition. In some embodiments, the controller 190 may be designed to be provided with data concerning a limitation in current capacity of the utility power source 201, one or both of the distribution panels 110 and 120, or one or more other components conveying power to or within the installation 1000. Such data may, for example and without limitation, be provided to the controller 190 by an operator or installer of the installation 1000 or the loadcenter 1100, or may be provided to the controller 190 at the time of fabrication of the loadcenter 1100. In such embodiments, the controller 190 monitors the flow of current to or within the installation 1000 to determine when to cause load shedding in response to a current flow reaching a predetermined level. Preferably, given that the critical loads 228-229 are meant to be given higher priority than the non-critical loads 218-219, the controller 190 would, at least initially, shed one or more of the non-critical loads 218-219 before shedding any of the critical loads 228-229.” *Id.* ¶ [0028]. “The main breaker 101, the generator breakers 115, 125, 145 and 155, the circuit isolators 105-107, and/or the UPS circuits 181-182 are operated by the controller 190 to coordinate the selection and supply of power to the distribution panels 110, 120, 130, 140, 150 and 160. The load breakers 118-119, 128-129, 138-139, 148-149, 158-159 and/or 168-169 are also operated by the controller 190 to coordinate the disconnection of one or more of the non-critical loads 218-219 and 248-249, the critical loads 228-229 and 258-259, and/or the ultra-critical loads 238-239 and 268-269 with the selection and supply of power to the distribution panels 110, 120, 130, 140, 150 and/or 160 in instances where the supply of power is relatively limited. As in the loadcenters 1100 and 2100, the controller 190 of the loadcenter 3100 is

an automated electronic device that responds to one or more inputs indicating the status of one or more power sources and/or at least one characteristic of the power provided by one or more power sources. In addition to previously discussed inputs to the controller 190, such inputs may additionally include an indication of the condition of the generator power sources 245 and 255, including available fuel, or the battery 182, including available electricity.” *Id.* ¶ [0057].

- The Schnackenberg reference discloses “[a]nother advantageous feature has been mentioned hereinabove, namely intelligent load shedding and restoration. Microcontroller 55, and the associated sensing and conditioning circuits, sense generator line current and calculate total power, to facilitate intelligent load shedding and restoration. This will avoid overloading the generator either with lines A or B current or total power (the summation of phase A and phase B power) and making the generator stall or engage trip protection. Load shedding avoids the necessity of oversizing the generator and permits a larger combination of loads to be supported by the generator than the total load rating of the generator. Excess loads will be automatically shed and restored when the intermittent load combination falls back to acceptable limits as configured into microcontroller 55. For example, microwave ovens, water pumps, air conditioning compressors, etc., create large but intermittent and transient loads. When such loads turn off, microcontroller 55 automatically restores previously cut out lower priority loads. Without intelligent load shedding, the total possible connected load combination cannot exceed the total load rating of the back-up generator, even though many individual components of the total load are intermittent and/or transient loads, thus requiring larger capacity (more expensive) generators.” Schnackenberg at 11:65–12:20.

As shown by these exemplary references, there were common objectives and solutions that predated the patent, such that a person of ordinary skill in the art would have been motivated to combine these and other references.

Additionally, market forces demanded that the efficiencies and functionality provided by backup inverter systems become easier to deploy in environments where power sources may become overloaded, causing damage to the power sources and disrupting the system they are connected to. Moreover, market forces demanded that the efficiencies and functionality provided by addressing overloads be available as a proactive solution to preventing the damage and disruption caused by overloads. Thus, one of skill in the art would have been motivated to combine or modify references using known methods that one of skill in the art would have recognized as

offering improvements to solutions of that time. The references identified above, *see supra* Sections IV.A.3, IV.B.3, and IV.C, describe solutions that were known to offer improvements and thus one of skill in the art would have been motivated to combine or modify combined references to include such improvements.

Because the Asserted Claims simply arranges old elements known in the field with each performing the same function it had been known to perform and yields no more than what one would expect from such an arrangement, combinations of the prior art are obvious. At the time of the alleged invention, there were a finite number of predictable solutions, and a person of ordinary skill in the art had good reason to pursue or combine known options and related applications.

In sum, motivations to modify or combine the identified references including the references listed can be found via, for example, discussions in the cited references, the state of the art discussed in the references, and the knowledge of one of ordinary skill in the art. One of ordinary skill in the art would have been motivated to combine these references, because these references relate to common objectives and subject matter. The references share commonalities in terms of their general subject matter as well as the types of equipment, products, systems, or methods used. Further, the prior art references explicitly or implicitly reference other prior art references, which would motivate one of skill in the art to combine them. These references are within the same or similar fields and are directed to similar subject matter. Additionally, the references, and any products, devices, or processes described in the references, existed or were invented in the same time period providing further motivation for combination. Further elaboration and information shall be provided with Defendant's expert reports.

In view of the following, Defendant provides the follow non-limiting combinations, which are not intended to be exhaustive, as there are many possible combinations of the prior art listed

herein and it is not practical, particularly at this early stage prior to further factual investigation, to identify and list all potentially relevant combinations. In particular, the Asserted Claims are rendered obvious under 35 U.S.C. § 103 in view of at least, and without limitation, the following exemplary combinations:

Exemplary Combinations
Cheng in view of a Person of Ordinary Skill in the Art
Espeut in view of a Person of Ordinary Skill in the Art
Gull I in view of a Person of Ordinary Skill in the Art
Lasseter II in view of a Person of Ordinary Skill in the Art
Lim in view of a Person of Ordinary Skill in the Art
Power Control System in view of a Person of Ordinary Skill in the Art
Smart Energy Management System in view of a Person of Ordinary Skill in the Art
Sullivan in view of a Person of Ordinary Skill in the Art
Wareham in view of a Person of Ordinary Skill in the Art
Wedel I in view of a Person of Ordinary Skill in the Art
Wedel II in view of a Person of Ordinary Skill in the Art
Zhu in view of a Person of Ordinary Skill in the Art
AAPA in view of a Person of Ordinary Skill in the Art
Zhu in combination with Lasseter II
Zhu in combination with Cheng
Zhu in combination with Wedel I
Zhu in combination with Wedel II
Zhu in combination with Sullivan
Zhu in combination with Espeut
Zhu in combination with Lim
Zhu in combination with Gull I
Zhu in combination with Power Control System
Zhu in combination with Smart Energy Management System
Lasseter II in combination with Cheng
Lasseter II in combination with Wedel I
Lasseter II in combination with Wedel II
Lasseter II in combination with Sullivan
Lasseter II in combination with Espeut
Lasseter II in combination with Lim
Lasseter II in combination with Gull I
Lasseter II in combination with Power Control System
Lasseter II in combination with Smart Energy Management System
Generac Prior Art in view of a Person of Ordinary Skill in the Art
Generac Power Art in combination with AAPA
Generac Prior Art in combination with Lasseter II

Exemplary Combinations
Generac Prior Art in combination with Cheng
Generac Prior Art in combination with Wedel I
Generac Prior Art in combination with Wedel II
Generac Prior Art in combination with Sullivan
Generac Prior Art in combination with Espeut
Generac Prior Art in combination with Lim
Generac Prior Art in combination with Gull I
Generac Prior Art in combination with Power Control System
Generac Prior Art in combination with Smart Energy Management System
Generac Prior Art in combination with Zhu

In addition to the above exemplary combinations, it would have been obvious to combine any of the anticipatory references or exemplary combinations with any of the admitted prior art disclosed in the Asserted Patents. Moreover, it would have been obvious to combine any of the anticipatory references or exemplary combinations with any of the references in the following illustrative categories.

Plurality of Power Sources References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose control of power provided from a plurality of power sources, in at least claim elements 13[pre] and 37[pre], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Plurality of Power Sources References”) to render obvious claims that may require such or similar features.

- AAPA
- Zhu
- Cheng
- Lasseter II
- Power Control System 50A
- Smart Energy Management System
- Wedel I

- Wedel II
- Wareham
- Sullivan
- Espeut
- Lim
- Gull I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Plurality of Power Sources References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Plurality of Power Sources References, control of power provided from a plurality of power sources was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Plurality of Power Sources References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, switching between a power ground and a backup power source—combined with a finite number of identified predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Backup Power Transfer Switch References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a backup power transfer switch to switch between a power grid and a backup power source, in at least claim elements 13[a], 13[b], 37[a], and 37[b], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references

(“Backup Power Transfer Switch References”) to render obvious claims that may require such or similar features.

- AAPA
- Zhu
- Lasseter II
- Wedel I
- Wedel II
- Wareham
- Espeut
- Lim
- Gull I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Backup Power Transfer Switch References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Backup Power Transfer Switch References, switching between a power grid and a backup power source when there are issues with the power grid was well-known in the art by the time of the Asserted Patents’ claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Backup Power Transfer Switch References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, continuing to power a system when there are issues with the power grid—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

DC to AC Inverter Powered by a Battery References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose powering a group of loads in a system with a DC to AC inverter that is powered by a battery, in at least claim elements 37[a] and 37[b], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“DC to AC Inverter Powered by a Battery References”) to render obvious claims that may require such or similar features.

- AAPA
- Zhu
- Lasseter II
- Power Control System 50A
- Smart Energy Management System
- Espeut
- Lim
- Gull I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary DC to AC Inverter Powered by a Battery References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing DC to AC Inverter Powered by a Battery References, powering a group of loads with a DC to AC inverter powered by a battery was well-known in the art by the time of the Asserted Patents’ claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary DC to AC Inverter Powered by a Battery References would have amounted to applying a known technique to a known device ready for

improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, providing a backup power source from a battery that was charged by a power grid but can power loads independently of it—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Processor Circuit Programmed to Switch Between Inverter and Power Grid References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a processor circuit programmed to switch between a DC to AC inverter and a power grid, in at least claim elements 13[b] and 37[b], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Processor Circuit Programmed to Switch Between Inverter and Power Grid References”) to render obvious claims that may require such or similar features.

- AAPA
- Zhu
- Lasseter II
- Wedel II
- Wareham
- Espeut
- Lim
- Gull I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Processor Circuit Programmed to Switch Between Inverter and Power Grid References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Processor Circuit Programmed to

Switch Between Inverter and Power Grid References, programming a processor circuit to switch between an inverter and a power grid was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Processor Circuit Programmed to Switch Between Inverter and Power Grid References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, using a power grid when available and an inverter when there are issues with the power grid—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Timely Monitoring the Current Provided to the Loads References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose timely monitoring the current provided to a group of loads, in at least claim elements 13[b] and 37[b], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Timely Monitoring the Current Provided to the Loads References”) to render obvious claims that may require such or similar features.

- Cheng
- Lassetter II
- Power Control System 50A
- Smart Energy Management System
- Wedel I
- Wedel II
- Wareham
- Sullivan
- Espeut

- Lim
- Gull I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Timely Monitoring the Current Provided to the Loads References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Timely Monitoring the Current Provided to the Loads References, monitoring the current provided to loads was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Timely Monitoring the Current Provided to the Loads References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, monitoring the current provided to loads to determine if proactive action is needed—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Preventing Maximum Current Capacity of Inverter from Being Exceeded References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose taking action to prevent exceeding the maximum current capacity of a DC to AC inverter, in at least claim elements 13[b] and 37[b], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Preventing Maximum Current Capacity of Inverter from Being Exceeded References”) to render obvious claims that may require such or similar features.

- Cheng
- Lasseter II

- Power Control System 50A
- Smart Energy Management System
- Wedel I
- Wedel II
- Wareham
- Sullivan
- Espeut
- Lim
- Gull I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Preventing Maximum Current Capacity of Inverter from Being Exceeded References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Preventing Maximum Current Capacity of Inverter from Being Exceeded References, taking action to prevent exceeding the maximum current capacity of a DC to AC inverter was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Preventing Maximum Current Capacity of Inverter from Being Exceeded References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, taking action to prevent overload of a power source—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(b) '618 Patent

Like the '727 Patent above, the '618 Patent relates to a “method and apparatus for controlling the load presented to one or more power sources such as a power grid [or] backup power generator.” '618 Patent at Abstract. In the '618 Patent, “connecting, disconnecting, limiting and controlling various loads . . . is prioritized by various parameters.” *Id.* The parameters include “load handling capability, type of load, load size, environmental factors, load usage during and subsequent to load connection, load priority and operator wishes.” *Id.* The operator may specify for loads to be reconnected “at a given time or during a given time period.” *Id.* at 2:26–45. In addition to controlling loads, the '618 Patent “may also operate to facilitate transfer of power from one power source or load to another power source or load.” *Id.* at Abstract.

As admitted by the '618 Patent and disclosed in the prior art, load shed systems that reconnect shed loads after a set amount of time after an overload is detected. *See, e.g., id.* at 17:50–18:3; Generac Prior Art. Additionally, prior art discloses load shed systems that reconnect shed loads when the system determines by measuring quality of supplied power—for example, the power’s frequency, current, or voltage—that the risk of overload has passed. *See, e.g.,* Espeut at [0143]; Baldassarre at [0058]. Prior art also discloses load shed systems that are configured to receive operator inputs for a variety of parameters, including acceptable power quality, power source, time, load type, and load shed priority. *See, e.g.,* Generac Prior Art. It would have been obvious to one of ordinary skill in the art to permit an operator to configure the time between load shed and load reconnection upon installation of the load shed system.

The identified references are in the same or similar technical fields, address the same technical issues, and suggest similar solutions. Indeed, the need for transferring power from one power source to another, *id.*, as well as using load shedding to avoid overloads, *id.*, was already

recognized in the prior art and the field of the invention and would have provided a person of ordinary skill in the art motivation to combine the prior art references identified as to this patent.

For example, Gull III discloses a backup power management system with a transfer switch that can switch between a primary and secondary power source. Gull III at [0021], [0024]–[0025]. If the primary power source fails, the system starts the secondary power source and switches the loads to it. *Id.* at [0040]–[0042]. To prevent an overload of the secondary power source, the system continuously monitors the power supplied by the secondary power source and removes loads if it senses a potential overload. *See id.* at [0046], [0050]. The system removes loads according to load priority using load shedding circuitry. *See id.* at [0050]–[0051].

As another example, Espeut II discloses an automatic transfer switch that also senses a utility failure, starts up a backup generator, and switches household loads from the utility to the generator. Espeut II at Abstract. Espeut II’s system also performs load shedding to prevent a generator overload. *Id.* at [0127]–[0144]. The system includes a user interface that allows an operator to program the system to monitor characteristics of the provided power and control the load shedding. *Id.* at [0086], [0110].

Wareham also discloses a system with a transfer switch and load shedding capabilities. Wareham at Abstract, Fig. 1. It seeks to “manag[e] loads for alternate power supplies and during conditions of limited supply.” *Id.* at Abstract. Wareham’s system allows operators to set the order that loads will be shed using load priority. *Id.* at [0043]. Operators can also override priority should they choose. *Id.* at [0013], Fig. 6. Additionally, loads are reconnected according to priority when the risk of overload has been averted or an operator requires a different load to be powered. *Id.* at [0010], [0048].

Tsukida describes a method of shedding loads where a system measures the frequency of supplied power. Tsukida at Abstract. The system begins to shed loads when the frequency drops below a specific threshold for a set amount of time. *Id.* However, if the frequency drops a larger amount, then the system sheds the loads faster. *Id.*

Sullivan discloses a “System and method for optimizing shed/restore operations for electrical loads.” To obtain this, Sullivan describes a “system for controlling electrical load shedding and restoring operations includes a microprocessor system, a power measuring circuit, and a plurality of load switching relays controlled by the microprocessor system to electrically connect controlled loads of a residence to, and electrically disconnect the controlled loads from, a power line in accordance with priorities associated with the controlled loads.” Sullivan at Abstract. Sullivan explains that “[w]hen the current in the power bus exceeds the predetermined peak demand, the logic of the microprocessor generates signals which control current interrupters which are in series electrical connection with the loads. The computer logic is programmed to activate the power interrupters so as to shed the loads in a predetermined sequence when the total current in the power bus exceeds the predetermined peak demand. After shedding sufficient loads to reduce the actual current in the power bus to a point equal to or less than the predetermined peak total, the logic then determines whether any of the loads which have been shed can be restored to operation without exceeding the predetermined peak demand. If so, that load is automatically restored to operational status.” *Id.* at 5:35-52.

The Wedel I reference describes a “a transfer mechanism” that works by “transferring the supply of electrical power on a load between a utility source and a stand-by electrical generator.” Wedel I at Abstract. Wedel I contemplates a system with prioritized loads—he describes “an essential load and a secondary load.” *Id.* This system therefore includes “[a] load shed controller”

that “monitor[s] the electrical power supplied” and “terminates the electrical power supplied to the secondary load in response to the generator being overloaded.” *Id.* After a “predetermined time period after termination,” the “secondary load is reconnected” to the power supply. *Id.* at [0015].

As another example, Gull IV proposes a “system that uses the method, of managing loads for residential use.” Gull IV at Abstract. This system includes “signal-responsive switch[es]” connected to prioritized loads. When the switches “sense . . . signals exceed[ing] a first threshold value,” the lower-priority switch is opened. *Id.* at Cl. 1. The signals may be indicative of voltage, current, or power. *Id.* at Cl. 4. Similarly, if the switches “sense . . . signal[s] exceed[ing] the second threshold value,” the higher-priority switch is opened. *Id.* at Cl. 9. After the signals return below the thresholds, the switches are closed, restoring the loads. *Id.* at Cl. 9–10.

In Baldassarre, “[a] control system is provided for controlling a load powered by an auxiliary power source.” Baldassarre at Abstract. The system “automatically controls non-essential loads in order to maintain the auxiliary power load below the maximum threshold” by shedding and restoring the loads. *Id.* Additionally, users may interact with the system via a user interface, permitting them to change the priority of loads or override the system’s automatic processes. *Id.*

Similarly, Schweitzer discloses “a load shedding scheme . . . that utilizes a cross-point switch matrix to facilitate high-speed load shedding based on a set of input factors.” Schweitzer at [0009]. The input factors include a user-assigned priority, *id.* at [0025], and an “undesirable event” like “a power deficit, an under-frequency condition, a load surplus, or an imbalance,” *id.* at [0011].

Additional references similarly discuss the same identified problem and similar solutions:

- For example, Chassin II discloses: “Control circuitry 24 is further configured to access a value of a shed threshold for comparison operations which may trigger power management operations. Control circuitry 24 compares the counted number of clock pulses with respect to the value of the shed threshold to compare the system frequency of the received electrical energy with respect to the value of the shed threshold. As described below, the monitoring may trigger control power management operations of the power management device 16, including, for

example, adjusting or ceasing a supply of electrical energy from the grid 14 to the respective load 18. In some arrangements, numerous power management devices 16 configured to implement power management operations may be and typically are simultaneously coupled with a given grid 14. Severe stresses may be introduced if all or a substantial number of devices 16 were configured to simultaneously implement power adjustment operations. In one accordance with one aspect, power management devices 16 are configured to implement power management operations at different moments in time to distribute the effects of such adjustment of the devices 16 over a longer period of time to avoid or minimize stresses to supply 12 and grid 14 as a result of the power adjustment operations. In one embodiment, the power management devices 16 are configured to implement power adjustment operations responsive to different criteria. In one embodiment, devices 16 may be configured with different values of the shed threshold to control the triggering of power management operations. Utilization of different values of the shed threshold causes the devices 16 to trigger responsive to different values of system frequency of the electrical energy in the described example to spread the effects of the power management operations.” Chassin II at 7:7–39.

- Chassin II discloses: “According to additional exemplary aspects, it is desired to configure individual power management devices 16 to utilize a plurality of different values for the shed threshold at different moments in time for comparison operations to avoid or minimize one or more of devices 16 being more frequently susceptible to power management operations than others of the devices 16. Accordingly, the utilization of different values of the respective shed thresholds by devices 16 provides an equitable distribution of power management inconvenience to the associated users in one implementation. In one embodiment, power management devices 16 are individually configured to vary the values of the shed threshold at different moments in time to provide a plurality of different values for the shed threshold. In exemplary aspects described below, power management devices 16 randomly assign the respective value at different moments in time. The random assignment by individual devices 16 provides values for the shed threshold between an upper bounding value and a lower bounding value which control the respective frequencies at which power management operations are implemented responsive to the system frequency. It may be desired to set the upper bounding value to a point below a critical frequency or value to avoid devices triggering too frequently responsive to normal operational fluctuations of the system frequency of the power distribution system 10. Using the western grid of North America as one example, an upper bounding value corresponding to the critical value may be 59.95 Hz. The critical value may vary from system to system and also at different times of the year.” Chassin II at 7:57–8:19.
- Chassin II also discloses: “Following implementation of power management operations responsive to the shed threshold being triggered, control circuitry 24 continues to monitor the electrical energy of the system 10 to determine an appropriate time to return to normal (e.g., increased consumption)

operation. In one embodiment, a restore threshold may be used to control resumption of normal power consumption operations with respect to load 18. According to one arrangement, the value for the shed threshold may be used as a value of the restore threshold to determine when to resume normal operations (e.g., responsive to the system frequency rising above the value of the shed threshold). In another embodiment, a hysteresis value may be used to define the value of the restore threshold. Referring to FIG. 3, exemplary states of the power management devices 16 are shown with respect to system frequency and an exemplary shed threshold and restore threshold. The shed threshold is depicted as TH1 and the restore threshold is depicted as TH2. The nominal system frequency may be 60 Hz. The hysteresis value may be defined as the difference between TH1 and TH2. The hysteresis is utilized in one aspect to minimize resumption operations in continued conditions of grid instability. In state 0, the power management device 16 is in normal power consumption mode wherein device 16 provides desired electrical energy to the respective load 18. Following detection of system frequency triggering TH1 (e.g., dropping below TH1), the device 16 enters state 1 wherein electrical energy either is not applied to load 18 or a reduced amount of electrical energy is applied. During state 1, control circuitry 24 monitors the system frequency with respect to the restore threshold. Once the system frequency rises above the restore threshold, the condition of the power distribution system 10 is recovering and device 16 enters state 3. In state 3, a delay timer may be triggered to establish a delay period for returning the respective device 16 to a normal operational mode. In one embodiment, the length of the delay is different for different devices 16. It is desirable in one aspect to have devices perform restoration or resumption operations at different times to minimize significant simultaneous load fluctuations responsive to numerous devices 16 restoring consumption at the same moment in time. Accordingly, different devices 16 have different periods of delay which are triggered responsive to system frequency triggering the restore threshold TH2. The delay periods are counted by the respective devices 16 responsive to triggering of TH2 and thereafter the respective loads 18 may be restored after the respective delay periods. In one embodiment, the amount of delay for a given individual device 16 changes at different moments in time. For example, the period of delay may be randomly generated at different moments in time. The delay may be calculated using the value from memory 25 described above in one instance. As described in the previous example, the random number may be generated from 50 or more different possible random numbers by memory 25. Control circuitry 24 may utilize the randomly generated number to provide a length of delay in seconds corresponding to the magnitude of the randomly generated number. Following detection of system frequency rising above TH2, control circuitry 24 may count the respective delay period during state 3 (e.g., in waiting mode), and thereafter return to state 0 including load restoration and monitoring of system frequency with respect to TH1. Other methods are possible for varying values for the shed threshold and/or the period of delay before load restoration. For example, varying may be implemented by a rotating number of values or other mechanism not comprising random generation.” Chassin II at 9:7–10:8.

- As another example, Donnelly discloses “Electrical appliance energy consumption control methods and electrical energy consumption systems are described. In one aspect, an electrical appliance energy consumption control method includes providing an electrical appliance coupled with a power distribution system, receiving electrical energy within the appliance from the power distribution system, consuming the received electrical energy using a plurality of loads of the appliance, monitoring electrical energy of the power distribution system, and adjusting an amount of consumption of the received electrical energy via one of the loads of the appliance from an initial level of consumption to an other level of consumption different than the initial level of consumption responsive to the monitoring.” Donnelly at Abstract.
- Donnelly also discloses: “Some electrical power distribution systems are ever-changing dynamic systems and operations are often concerned with balancing generation with load. Frequency of the voltage of the electrical energy may be used as an indicator of variances between generation of electrical energy and usage of electrical energy by loads coupled with the electrical power distribution system. For example, when demand exceeds generation, the frequency of the electrical energy on the electrical power distribution system may drop, and conversely, when there is excess electrical energy available, the frequency increases. Over a given 24 hour period, it is desired to balance energy surplus and deficit so the average frequency is 60 Hz, or other desired frequency.” Donnelly at [0004].
- Donnelly also discloses: “According to another aspect of the invention, an electrical energy consumption system comprises a power interface configured to receive electrical energy of the power distribution system, a plurality of loads coupled with the power interface and configured to consume the received electrical energy, and control circuitry configured to monitor an electrical characteristic of the electrical energy of the power distribution system and to vary an amount of consumption of the received electrical energy via one of the loads responsive to the monitoring... In at least one embodiment, system controller 11, power management devices 16, and/or appliances 18 are configured to monitor at least one characteristic of the electrical energy provided from supply 12 and control a mode of operation of one or more associated appliance load coupled therewith. In one embodiment, system frequency of the electrical energy is monitored and the amount of electrical energy consumed by a respective appliance 18 may be adjusted responsive to the monitoring. For example, in one operational implementation, power management devices 16 may reduce an amount of electrical energy supplied to respective appliances 18 responsive to detection of a drop in system frequency of the electrical energy provided by supply 12. Monitoring operations and control operations may be split between controller 11, respective device 16, and/or respective appliance 18. One or more of controller 11, device 16, or control circuitry of appliance 18 may be omitted and the existing control circuitry provides monitoring and control operations. In some arrangements, both the monitoring and control operations may be provided by one of controller 11, respective device 16, or respective appliance 18... Adjustment of the consumption of electrical energy by an appliance 18 may be implemented responsive to monitoring by appropriate control circuitry of

electrical energy of power distribution system 10. In one embodiment, a characteristic (e.g., system frequency) of the electrical energy is monitored. The incorporated patent application provides exemplary monitoring operations of system frequency (e.g., voltage) of electrical energy supplied by power distribution system 10. Other characteristics of electrical energy of system 10 may be monitored in other constructions.” Donnelly at [0024], [0033], [0048].

- Donnelly also discloses: “System controller 11 is configured as control circuitry to monitor and manage operations of system 10 in some embodiments. System controller 11 may comprise a microprocessor in one embodiment to implement exemplary monitoring and control aspects of the power management operations described herein. System controller 11 may be referred to as a centralized controller in one embodiment and for example operated by supply 12 or at some location distant from consumers. In one arrangement, system controller 11 is configured to monitor electrical energy distributed within system 10 and issue appropriate control signals to power management devices 16 and/or appliances 18 (e.g., via networked, wired or wireless communications) to implement power management operations described herein. Implementation of power management operations by system controller 11 configured in the above-identified centralized embodiment may be referred to as centralized operations.” Donnelly at [0027].
- Donnelly further discloses: “Power management operations may be implemented in variety of configurations. For example, in the centralized arrangement, system controller 11 comprises control circuitry configured to monitor electrical energy of system 10 and issue control signals to devices 16 and/or appliances 18 to control the application of electrical energy to appliances 18. In passive arrangements, system controller 11 may be omitted, and adjustment of the supply of electrical energy may be implemented by individual devices 16 responsive to internal monitoring by devices 16 of electrical energy of system 10. Some embodiments of system 11 may include centralized and passive power management operations. In the described exemplary embodiments, power management operations include monitoring of electrical energy from supply 12 and adjusting (e.g., reducing) an amount of electrical energy consumed by respective appliances.” Donnelly at [0032].
- Gardner discloses: “The embodiment of the invention includes one or more monitoring devices, referred to as “Generator Monitors” which measure the momentary power being used by the home or facility. These generator monitors calculate the remaining power available from the generator and then transmit this available power to the other devices in the system. Each generator monitor transmits the available power to either all or a select group of devices that control the use of electricity in the home. The other devices in the system, are either an “Interrupt Switch” which controls the power delivered to appliances that turn themselves on and off automatically, or a “User Display” which reports the available power to users that turn on appliances manually, allowing the user to make informed decisions as to whether the appliance can be turned on without

overloading the generator. The generator monitors are programmed with the maximum power allowed for the group of appliances monitoring the available power transmissions. The available power is defined as GAP for Generator Available Power. If all the appliances in the home are to have access to the full capacity of the generator, then one generator monitor is configured. If the user decides to allocate a percentage of the generator capacity to a group of appliances (i.e. water pump, furnace and refrigerator) and allocate the balance of the generator capacity to the remaining appliances, then two generator monitors are configured. Multiple generator monitors provide the user a greater level of control over the generator's power. The embodiment of the invention uses interrupt switches to deny power to appliances that turn themselves on and off automatically, when GAP or available power levels are low. The invention informs users, via user displays, of the momentary GAP levels, along with the power needed to activate appliances in the area local to the user display. When GAP levels remain low for extended periods of time and interrupt switches deny power, keeping the supported appliances disabled for extended time periods, the interrupt switches transmit the disabled condition to user displays for reporting to users. Users can then turn off other appliances, freeing up generating capacity, allowing the GAP levels to rise and for the interrupt switches to return power and enable their appliances.” Gardner at [0005]–[0006].

- Gardner also discloses “The at least one load control may comprise an interrupt switch for interrupting the supply of power to the electric load when the transmitted load capability is less than a predetermined level. The interrupt switch interrupts the supply of power for an interrupt time period upon the return of power following a power failure condition. The interrupt time period is preferably set to delay the return of power for a period of time for the purpose of reducing the total sudden load on the main power source at initial power return. The interrupt switch may further monitor electric power levels drawn by the at least one electric load and interrupt the supply of power to the electric load when the transmitted load capability is less than the monitored power levels of the at least one electric load. The interrupt switch may further delay interruption of the supply of power until the electric load has completed an operation cycle and may further delay interruption of the supply of power until the electric load has completed an operation cycle if the electric load's continuous load level is substantially equal to a predetermined level of normal operation.” Gardner at [0012].
- The Kern reference teaches: “It is contemplated that system controller 14 incorporate a load shedding feature such that if the electrical power from the utility fails and if the plurality of generators in power generation system 12 are inadequate to provide sufficient electrical power to support load 74, system controller 14 may disconnect a portion of load 74 from supply line 40. A circuit breaker with a shunt trip is provided in series with portions of load 74. If the electrical power from the utility fails, system controller 14 trips the circuit breaker and removes a corresponding portion of load 74 from the system. It is contemplated that multiple load shedding relays be provided and the system controller 14 only shed such portion of load 74 as necessary to allow the generators of power generation system

12 to provide adequate electrical power to the load. By way of example, if one or more of the plurality of electrical generators of power generation system 12 are off line, additional portions of the load may be shed in order to for the generators in operation to provide adequate electrical power to load 74.” Kern at [0066].

- Kern also discloses: “If the electrical power from the utility fails, generator controls 42 of generator panels 16 start engines 22 such that generators 20 *a* and 20 *b* generate electrical power, as heretofore described. When the electrical power generated by generators 20 *a* and 20 *b* reaches the magnitude and frequency desired by the user, transfer switches 38 transfer loads 34 and 36 from supply line 40 to corresponding outputs 31 of generators 20 *a* and 20 *b*, respectively. The power and power factor of the outputs of generators 20 *a* and 20 *b*, as well as, the total power provided by generators 20 *a* and 20 *b* to loads 34 and 36, respectively, are displayed on display screen 60. Display screen 60 also updates the power connections of power generation system 12.” Kern at [0058].
- Kern also discloses: “The network controller of claim 10 wherein each power generation system includes a monitoring structure connectable to a utility source which provides AC power having a magnitude and a power factor, AC voltage having a magnitude and a frequency, and AC current having a magnitude and a frequency, the monitoring structure measuring the magnitude and the frequency of the AC voltage and the AC current of the corresponding utility source and providing the same to the user interface of the corresponding power generation system.” Kern at Cl. 11.
- Lathrop I discloses: “Changes to Article 702 of the 2008 National Electric Code have dictated that for an automatic transfer switch: (1) the generator is sized to power the entire load; or (2) a form of active load management is utilized to ensure that the generator does not become overloaded. The first option is relatively more costly, since the typical electrical service in the United States is 200 A, with 400 A services becoming more common. Hence, the user would be forced to utilize a relatively large and expensive generator. The second option allows for a more cost effective solution, since a relatively smaller generator can be utilized to power the load.” Lathrop I at [0009].
- Lathrop I also discloses: “It is also known to only allow the air conditioner to start if there is a certain percentage of power available from the generator. For example, upon sensing that a thermostat input to start the air conditioner is active, and if the generator output is below 80% of its maximum power output, then a corresponding control allows the air conditioner to start. However, if the generator power output is greater than or equal to 80% of its maximum power output, then the air conditioner is not allowed to start. This may cause other loads to be shed, in order to cause the generator power output to be less than 80% of its maximum power output and, thus, allow the air conditioner to be started. Also, the locked rotor currents of air conditioners are known to vary from brand-to-brand and from size-to-size. Thus, generator power available for shed loads might not be utilized.” Lathrop 1 at [0012].

- Lathrop II discloses: “Referring to FIG. 1, a loadcenter installation 1000 to selectively provide electrical power to non-critical and critical loads (e.g., non-critical loads 218-219 and critical loads 228-229 depicted in FIG. 1) from multiple alternate sources incorporates generator power sources 215 and 225, and a loadcenter 1100 distributing electric power, at various times, from one or both of the generator power sources 215 and 225, or from a utility power source (e.g., utility power source 201 depicted in FIG. 1) to one or more non-critical and critical loads. As will be explained, the loadcenter 1100 normally distributes power received from the utility power source 201, unless the utility power source 201 becomes unacceptable, in which case, the loadcenter 1100 distributes power from one or both of the generator power sources 215 and 225. The non-critical loads 218-219 and the critical loads 228-229 represent one or more electrical devices within, for example, a commercial or residential structure (not shown) that require electric power, such as for example and without limitation, lighting, plug-ins, appliances, commercial machinery and climate control systems. The critical loads 228-229 differ from the non-critical loads 218-219 in that the critical loads 228-229 are given priority in the distribution of power where there is insufficient power to supply both the non-critical loads 218-219 and the critical loads 228-229. The utility power source 201 is a source of electric power from a commercial vendor (e.g., without limitation, a connection to an electrical grid maintained by a utility power company).” Lathrop II at [0020].
- Lathrop II also discloses: “During such normal operation in which the utility power source 201 supplies power to both of the distribution panels 110 and 120, the controller 190 may also be provided with the ability to implement one or more requirements of a safety standard, such as and without limitation, Article 702 of the 2008 National Electric Code promulgated by National Fire Protection Association. More specifically, the controller 190 may signal one or more of the load breakers 118-119 and/or 128-129 to shed one or more of the non-critical loads 218-219 and/or one or more of the critical loads 228-229 in response to detecting a possible unsafe condition. In some embodiments, the controller 190 may be designed to be provided with data concerning a limitation in current capacity of the utility power source 201, one or both of the distribution panels 110 and 120, or one or more other components conveying power to or within the installation 1000. Such data may, for example and without limitation, be provided to the controller 190 by an operator or installer of the installation 1000 or the loadcenter 1100, or may be provided to the controller 190 at the time of fabrication of the loadcenter 1100. In such embodiments, the controller 190 monitors the flow of current to or within the installation 1000 to determine when to cause load shedding in response to a current flow reaching a predetermined level. Preferably, given that the critical loads 228-229 are meant to be given higher priority than the non-critical loads 218-219, the controller 190 would, at least initially, shed one or more of the non-critical loads 218-219 before shedding any of the critical loads 228-229.” Lathrop II at [0028].
- Lathrop II also discloses: “The main breaker 101, the generator breakers 115, 125, 145 and 155, the circuit isolators 105-107, and/or the UPS circuits 181-182 are operated by the controller 190 to coordinate the selection and supply of power to

the distribution panels 110, 120, 130, 140, 150 and 160. The load breakers 118-119, 128-129, 138-139, 148-149, 158-159 and/or 168-169 are also operated by the controller 190 to coordinate the disconnection of one or more of the non-critical loads 218-219 and 248-249, the critical loads 228-229 and 258-259, and/or the ultra-critical loads 238-239 and 268-269 with the selection and supply of power to the distribution panels 110, 120, 130, 140, 150 and/or 160 in instances where the supply of power is relatively limited. As in the loadcenters 1100 and 2100, the controller 190 of the loadcenter 3100 is an automated electronic device that responds to one or more inputs indicating the status of one or more power sources and/or at least one characteristic of the power provided by one or more power sources. In addition to previously discussed inputs to the controller 190, such inputs may additionally include an indication of the condition of the generator power sources 245 and 255, including available fuel, or the battery 182, including available electricity.” Lathrop II at [0042].

- The Mahat publication discloses “The problem of optimal load shedding has been extensively investigated. A static load shedding strategy has been proposed in [4], which keeps on shedding a fixed amount of load with decreasing frequency. Fast-acting load shedding was proposed for implementation in the System Control Center in [5]. Supervisory- control and data-acquisition (SCADA)-based load shedding strategy has been proposed in [6]. Another load shedding scheme based upon SCADA for an isolated system is presented in [7]. And still another load shedding strategy based on the online measurement of the loads and load-frequency characteristics is presented in [8]. Loads with smaller frequency dependency are shed first and those with larger frequency dependency are shed later. The problem with these methods is that real-time information on loads is not always available and implementing online load measurement is expensive for small distribution systems. Furthermore, the system’s load-frequency dependency is often hard to determine especially with constantly changing loads. There is also an adaptive load shedding strategy, which changes the relay settings according to the frequency decay curve [9] as well as a load shedding method based on the frequency information and integration of df/dt to find the amount of load to be shed [10]. Other adaptive load shedding strategies based on df/dt are presented in [11]–[15].” Mahat at 1.
- Mahat also discloses “Ideally, the frequency should come back to the normal operating range with the load shedding but sometimes some other loads should also be shed to bring the frequency back. This is because of the assumption made while forming the lookup table and it helps to shed an optimal number of loads. After the first step of load shedding is initiated, the loads will wait for some time before they will measure the frequency again. The delay will account for the calculations and circuit-breaker operation time. The unshed loads will have to wait for the frequency to go down below and for the RoCoF to be negative for “T” times before they are shed, provided that all of the loads ranked higher than them are already shed. The distribution system does not have the luxury of spinning reserve and secondary control like the transmission system. Thus, the only way to bring the frequency above the lower limit is to shed loads as its DGs are already operating at their

maximum capacity. Waiting for the RoCoF to be negative for “T” half cycles will make sure the frequency is not coming back to nominal and frequency oscillation is accounted for. Choosing a longer “T” will result in the frequency reaching a lower value, especially when loads are highly frequency and voltage dependent, as enough loads are not shed in the first step. However, if smaller “T” is chosen, there is always a possibility of shedding more loads than required. Choosing T is system specific and depends on the preference between optimal load shedding and a better frequency profile. However, simulation results shows that choosing T around 10 can shed an optimal number of loads without letting the frequency to go down to a very low value even in worst-case scenarios.” Mahat at 2–3.

- Schnackenberg discloses “Another advantageous feature has been mentioned hereinabove, namely intelligent load shedding and restoration. Microcontroller 55, and the associated sensing and conditioning circuits, sense generator line current and calculate total power, to facilitate intelligent load shedding and restoration. This will avoid overloading the generator either with lines A or B current or total power (the summation of phase A and phase B power) and making the generator stall or engage trip protection. Load shedding avoids the necessity of oversizing the generator and permits a larger combination of loads to be supported by the generator than the total load rating of the generator. Excess loads will be automatically shed and restored when the intermittent load combination falls back to acceptable limits as configured into microcontroller 55. For example, microwave ovens, water pumps, air conditioning compressors, etc., create large but intermittent and transient loads. When such loads turn off, microcontroller 55 automatically restores previously cut out lower priority loads. Without intelligent load shedding, the total possible connected load combination cannot exceed the total load rating of the back-up generator, even though many individual components of the total load are intermittent and/or transient loads, thus requiring larger capacity (more expensive) generators.” Schnackenberg at 11:65–12:20.
- Shimizu discloses “By the way, in the portable AC power supply device as described above, various measures have been taken to protect its output circuit. However, depending on the output characteristics of the power supply device and the characteristics of the load, the load current to be output may vary. In some cases, the size does not directly serve as an indicator of the load state, and there is one aspect that does not constitute an appropriate protection system. For example, in a configuration in which the output is simply cut off when the load current becomes large, a load device such as an electric motor in which a large current flows temporarily at the time of start is connected to the output circuit of the power supply device. In this case, there is a possibility that the output may be cut off more than necessary at the time of starting the load device, and it has not been an optimum protection system for the output circuit... By the way, an induction motor (for example, an induction motor for an air compressor used at a construction site) is often used as a load of a portable AC power supply device of this type. Focusing on the starting current of a kind of inductance load, the output power of the load itself decreases as the frequency decreases, but the magnitude of the starting current also decreases. For example, in the case of a shared load of 50 Hz and 60 Hz, a

large amount of starting power (a large starting current at a constant voltage) is required at 60 Hz (higher frequency) due to the influence of inductance.” Shimizu at [0004], [0006].

- Weiner discloses “A power back-up unit is provided which includes a primary power source that is connected to a plurality of loads, including a critical load and a non-critical load. A secondary power source is also provided. A first low voltage disconnect is electrically connected to the secondary power source and the critical load. A second low voltage disconnect is electrically connected to the secondary power source and the non-critical load. In one embodiment, the second low voltage disconnect disconnects the non-critical load upon loss of the primary power source. In another embodiment, the second low voltage disconnect has a voltage threshold that is greater than the voltage threshold of the first low voltage disconnect such that the non-critical load is disconnected by the second low voltage disconnect prior to the critical load being disconnected by the first low voltage disconnect.” Weiner at Abstract.
- Weiner also discloses “Referring now to FIG. 2, there is shown another embodiment of the power back-up unit 10. In this embodiment, the first low voltage disconnect 20A is connected between the rectifier 14 and the secondary power source 16. The second low voltage disconnect 20B is connected between the first low voltage disconnect 20A and the non-critical load 50B. The critical load 50A is connected directly to the rectifier 14. Therefore, in this embodiment, the second low voltage disconnect 20B acts as a load disconnect while the first low voltage disconnect 20A acts as a secondary power source disconnect. However, the results are the same as the embodiment of FIG. 1. Upon loss of the primary power source 12, the voltage of the secondary power source 16 will begin to drop. When the voltage drops below the second voltage threshold, the second low voltage disconnect 20B opens its relay K2, thereby disconnecting the non-critical load 50B. When the voltage of the secondary power source 16 drops below the first voltage threshold, the first low voltage disconnect 20A opens its relay K1 thereby disconnecting the secondary power source 16 which thus disconnects the power to the critical load 50A. This figure shows that the first low voltage disconnect 20A includes a first voltage control circuit 22A that monitors the output voltage of the rectifier 14. The second low voltage disconnect 20B includes a second voltage control circuit 22B that monitors the voltage of the secondary power source 16. In this embodiment, the second low voltage disconnect 20B disconnects the non-critical load 50B from the secondary power source 16 once the voltage of the secondary power source 16 is less than the second voltage threshold. If during the time the non-critical load is disconnected, the primary power source 12 is restored, the voltage of the secondary power source 16 will begin to increase as the rectifier 14 recharges the secondary power source (e.g., a battery string). When the voltage of the rectifier 14 is greater than a third voltage threshold, as determined by the first voltage control 22A, the second low voltage disconnect 20B reconnects the non-critical load SOB to the primary power source 12 by, for example, closing the relay K2 or a solid state switch. In another embodiment, the second low voltage disconnect 20B reconnects the non-critical load 50B to the primary power

source 12 when the voltage of the secondary power source 16 is greater than a third voltage threshold, as determined by the second voltage control 22B. If, instead, during the time the non-critical load is disconnected, the primary power source 12 is not restored, the voltage of the secondary power source 16 will continue to drop. Thus, when the voltage of the secondary power source 16 drops below the first voltage threshold, the first low voltage disconnect 20A disconnects the secondary power source 16 thereby disconnecting the power to the critical load 50A. Then, when the primary power source 12 is restored, the critical load 50A will be supplied power from the rectifier 14. When the output voltage of the rectifier 14 is greater than a fourth voltage threshold, as determined by the first voltage control 22A, the first low voltage disconnect 20A reconnects the secondary power source 16 to the rectifier 14 by, for example, closing the relay K1 or a solid state switch. Thus, the voltage of the secondary power source 16 will begin to increase as the rectifier 14 recharges the secondary power source 16. In one embodiment, the third voltage threshold is 52 volts and the fourth voltage threshold is 49 volts. The first, second, third and fourth voltage thresholds are adjustable.” Weiner at 3:55–4:51.

As shown by these exemplary references, there were common objectives and solutions that predated the patent, such that a person of ordinary skill in the art would have been motivated to combine these and other references.

Additionally, market forces demanded that the efficiencies and functionality provided by backup inverter systems become easier to deploy in environments where that were setup for traditional load shedding—that is, with distributed load modules that looked for natural frequency droop from rotation power sources. Moreover, market forces demanded that the efficiencies and functionality provided by load shedding be available despite the added need for communicating and the costs associated therewith. Thus, one of skill in the art would have been motivated to combine or modify references using known methods that one of skill in the art would have recognized as offering improvements to solutions of that time. The references identified above, *see supra* Sections IV.A.1, IV.B.1, and IV.C, describe solutions that were known to offer improvements and thus one of skill in the art would have been motivated to combine or modify combined references to include such improvements.

Because the Asserted Claims simply arranges old elements known in the field with each performing the same function it had been known to perform and yields no more than what one would expect from such an arrangement, combinations of the prior art are obvious. At the time of the alleged invention, there were a finite number of predictable solutions, and a person of ordinary skill in the art had good reason to pursue or combine known options and related applications.

In sum, motivations to modify or combine the identified references including the references listed can be found via, for example, discussions in the cited references, the state of the art discussed in the references, and the knowledge of one of ordinary skill in the art. One of ordinary skill in the art would have been motivated to combine these references, because these references relate to common objectives and subject matter. The references share commonalities in terms of their general subject matter as well as the types of equipment, products, systems, or methods used. Further, the prior art references explicitly or implicitly reference other prior art references, which would motivate one of skill in the art to combine them. These references are within the same or similar fields and are directed to similar subject matter. Additionally, the references, and any products, devices, or processes described in the references, existed or were invented in the same time period providing further motivation for combination. Further elaboration and information shall be provided with Defendant's expert reports.

In view of the following, Defendant provides the follow non-limiting combinations, which are not intended to be exhaustive, as there are many possible combinations of the prior art listed herein and it is not practical, particularly at this early stage prior to further factual investigation, to identify and list all potentially relevant combinations. In particular, the Asserted Claims are rendered obvious under 35 U.S.C. § 103 in view of at least, and without limitation, the following exemplary combinations:

Exemplary Combinations
Baldassarre in view of a Person of Ordinary Skill in the Art
Espeut II in view of a Person of Ordinary Skill in the Art
Gull III in view of a Person of Ordinary Skill in the Art
Gull IV in view of a Person of Ordinary Skill in the Art
Schweitzer in view of a Person of Ordinary Skill in the Art
Sullivan in view of a Person of Ordinary Skill in the Art
Tsukida in view of a Person of Ordinary Skill in the Art
Wareham in view of a Person of Ordinary Skill in the Art
Wedel I in view of a Person of Ordinary Skill in the Art
Generac Prior Art in view of a Person of Ordinary Skill in the Art
Cummins Prior Art in view of a Person of Ordinary Skill in the Art
PC Prior Art in view of a Person of Ordinary Skill in the Art
Intellitec Prior Art in view of a Person of Ordinary Skill in the Art
AAPA in view of a Person of Ordinary Skill in the Art
Gull III in combination with Baldassarre
Gull III in combination with Espeut II
Gull III in combination with Gull IV
Gull III in combination with Schweitzer
Gull III in combination with Sullivan
Gull III in combination with Tsukida
Gull III in combination with Wareham
Gull III in combination with Wedel I
Gull III in combination with Generac Prior Art
Gull III in combination with Cummins Prior Art
Gull III in combination with PC Prior Art
Gull III in combination with Intellitec Prior Art
Gull III in combination with AAPA
Gull IV in combination with Baldassarre
Gull IV in combination with Espeut II
Gull IV in combination with Schweitzer
Gull IV in combination with Sullivan
Gull IV in combination with Tsukida
Gull IV in combination with Wareham
Gull IV in combination with Wedel I
Gull IV in combination with Generac Prior Art
Gull IV in combination with Cummins Prior Art
Gull IV in combination with PC Prior Art
Gull IV in combination with Intellitec Prior Art
Gull IV in combination with AAPA
Baldassarre in combination with Espeut II
Baldassarre in combination with Schweitzer
Baldassarre in combination with Sullivan
Baldassarre in combination with Tsukida
Baldassarre in combination with Wareham

Exemplary Combinations
Baldassarre in combination with Wedel I
Baldassarre in combination with Generac Prior Art
Baldassarre in combination with Cummins Prior Art
Baldassarre in combination with PC Prior Art
Baldassarre in combination with Intellitec Prior Art
Baldassarre in combination with AAPA
Espeut II in combination with Schweitzer
Espeut II in combination with Sullivan
Espeut II in combination with Tsukida
Espeut II in combination with Wareham
Espeut II in combination with Wedel I
Espeut II in combination with Generac Prior Art
Espeut II in combination with Cummins Prior Art
Espeut II in combination with PC Prior Art
Espeut II in combination with Intellitec Prior Art
Espeut II in combination with AAPA
Schweitzer in combination with Sullivan
Schweitzer in combination with Tsukida
Schweitzer in combination with Wareham
Schweitzer in combination with Wedel I
Schweitzer in combination with Generac Prior Art
Schweitzer in combination with Cummins Prior Art
Schweitzer in combination with PC Prior Art
Schweitzer in combination with Intellitec Prior Art
Schweitzer in combination with AAPA
Sullivan in combination with Tsukida
Sullivan in combination with Wareham
Sullivan in combination with Wedel I
Sullivan in combination with Generac Prior Art
Sullivan in combination with Cummins Prior Art
Sullivan in combination with PC Prior Art
Sullivan in combination with Intellitec Prior Art
Sullivan in combination with AAPA
Tsukida in combination with Wareham
Tsukida in combination with Wedel I
Tsukida in combination with Generac Prior Art
Tsukida in combination with Cummins Prior Art
Tsukida in combination with PC Prior Art
Tsukida in combination with Intellitec Prior Art
Tsukida in combination with AAPA
Wareham in combination with Wedel I
Wareham in combination with Generac Prior Art
Wareham in combination with Cummins Prior Art
Wareham in combination with PC Prior Art

Exemplary Combinations
Wareham in combination with Intellitec Prior Art
Wareham in combination with AAPA
Wedel I in combination with Generac Prior Art
Wedel I in combination with Cummins Prior Art
Wedel I in combination with PC Prior Art
Wedel I in combination with Intellitec Prior Art
Wedel I in combination with AAPA
Generac Prior Art in combination with Cummins Prior Art
Generac Prior Art in combination with PC Prior Art
Generac Prior Art in combination with Intellitec Prior Art
Generac Prior Art in combination with AAPA
Cummins Prior Art in combination with PC Prior Art
Cummins Prior Art in combination with Intellitec Prior Art
Cummins Prior Art in combination with AAPA
PC Prior Art in combination with Intellitec Prior Art
PC Prior Art in combination with AAPA
Intellitec Prior Art in combination with AAPA
Tsukida in combination with Espeut II and Wareham
Tsukida in combination with Gull IV and Wareham
Tsukida in combination with Sullivan and Gull IV
Tsukida in combination with Sullivan and Baldassarre
Tsukida in combination with Sullivan and Gull III and Gull IV
Sullivan in combination with Baldassarre and Gull IV
Sullivan in combination with Baldassarre and Espeut II
Sullivan in combination with Schweitzer and Gull IV
Sullivan in combination with Schweitzer and Gull III
Sullivan in combination with Schweitzer and Wedel I
Sullivan in combination with Schweitzer and Espeut II
Schweitzer in combination with Espeut II and Gull IV
Schweitzer in combination with Wedel I and Gull IV
Tsukida in combination with Espeut II and Genera Prior Art
Tsukida in combination with Wareham and Genera Prior Art
Tsukida in combination with Sullivan and Genera Prior Art
Tsukida in combination with Gull IV and Genera Prior Art
Tsukida in combination with Sullivan and Genera Prior Art
Sullivan in combination with Baldassarre and Genera Prior Art
Sullivan in combination with Schweitzer and Genera Prior Art
Tsukida in combination with Espeut II and Cummins Prior Art
Tsukida in combination with Wareham and Cummins Prior Art
Tsukida in combination with Sullivan and Cummins Prior Art
Tsukida in combination with Gull IV and Cummins Prior Art
Tsukida in combination with Sullivan and Cummins Prior Art
Sullivan in combination with Baldassarre and Cummins Prior Art
Sullivan in combination with Schweitzer and Cummins Prior Art

In addition to the above exemplary combinations, it would have been obvious to combine any of the anticipatory references or exemplary combinations with any of the admitted prior art disclosed in the Asserted Patents. Moreover, it would have been obvious to combine any of the anticipatory references or exemplary combinations with any of the references in the following illustrative categories.

Providing Power to Loads References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose providing power from multiple sources to a home or business with multiple loads, in at least claim elements 1[pre], 17[pre], and 17[.1], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Providing Power to Loads References”) to render obvious claims that may require such or similar features.

- AAPA
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan
- Wedel I
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Providing Power to Loads References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Providing Power to Loads References, providing power from multiple sources to a home or business with multiple loads was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Providing Power to Loads References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, powering loads during failure of a utility source—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Power Supply Responsive to Provided Power References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a power supply having an input responsive to the power at the contactor line terminal, in at least claim 17[.3.2], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("Power Supply Responsive to Provided Power References") to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III

- Gull IV
- Wedel I
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Power Supply Responsive to Provided Power References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Power Supply Responsive to Provided Power References, starting (responding) a generator (power supply) when a utility source fails (grid ceases supply) was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Power Supply Responsive to Provided Power References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, transitioning loads to a backup generator when a utility power source fails—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Transfer Switch References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a transfer switch with inputs coupled to different power sources that operates to select one power source to provide power to a load, in at least claim elements 17.1 and 17.2, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("Transfer Switch References") to render obvious claims that may require such or similar features.

- AAPA

- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- Wedel I
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Transfer Switch References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Transfer Switch References, transfer switches that selected between multiple power sources to provide power to loads were well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Transfer Switch References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, transitioning loads to a backup generator when a utility power source fails—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Load Coupler References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a contactor that supplies power to a load when closed and opens to prevent an overload,

in at least claim elements 1[pre], 1[.1], 1[.4], 17[.3.pre], 17[.3.1], and 17[.4], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Load Coupler References”) to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan
- Tsukida
- Wareham
- Wedel I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Load Coupler References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Load Coupler References, contactors that provide power to loads when closed and open to prevent an overload were well-known in the art by the time of the Asserted Patents’ claimed invention.

Combining an anticipatory reference or exemplary combination with any one of the above exemplary Load Coupler References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, selectively powering or removing loads to prevent the overload of a power source—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Responsive Processor Circuit References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a power circuit that is responsive to a parameter of provided power that controls a load coupler, in at least claim elements 1[.1], 1[.2], and 17[.3.3], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Responsive Processor Circuit References”) to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan

- Wedel I
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Responsive Processor Circuit References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Responsive Processor Circuit References, controlling a load coupler with a processor circuit responsive to a parameter of provided power was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Responsive Processor Circuit References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, assessing the quality of provided power and shedding loads to prevent an overload of a power source—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

User Selected Load Priority References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose load circuits with priorities selected by a user, in at least claim elements 1[.3], 1[.4], 6, 14, 17[.3.4], 17[.4], and 20, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("User Selected Load Priority References") to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art

- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary User Selected Load Priority References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing User Selected Load Priority References, user-selected load circuit priority was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary User Selected Load Priority References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, preventing an overload by shedding loads a user considers less essential while continuing to supply more essential loads—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Load Shedding in Response to Provided Voltage, Provided Frequency, Drawn Current, or Magnitude and Duration of an Overload References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose initiating a load shed in response to a measured voltage, frequency, current, or magnitude or duration of an overload of a power source, in at least claim elements 8, 9, 10, 11, 21, 23, 24, and 25, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Load Shedding in Response to Provided Voltage, Provided Frequency, Drawn Current, or Magnitude and Duration of an Overload References”) to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan
- Wedel I
- Tsukida
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above

exemplary Load Shedding in Response to Provided Voltage, Provided Frequency, Drawn Current, or Magnitude and Duration of an Overload References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Load Shedding in Response to Provided Voltage, Provided Frequency, Drawn Current, or Magnitude and Duration of an Overload References, initiating a load shed in response to a parameter of power was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Load Shedding in Response to Provided Voltage, Provided Frequency, Drawn Current, or Magnitude and Duration of an Overload References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, determining whether a power source is or will be overloaded and shedding loads to prevent or stop an overload—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Ending the Load Shed in Response to Frequency or a Known Amount of Time References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose ending a load shedding by reconnecting a load after the passage of a known time period or when the power returns to a known frequency, in at least claim elements 13, 14, and 25, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Ending the Load Shed in Response to Frequency or a Known Amount of Time References”) to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art

- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan
- Tsukida
- Wareham
- Wedel I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Ending the Load Shed in Response to Frequency or a Known Amount of Time References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Ending the Load Shed in Response to Frequency or a Known Amount of Time References, waiting for frequency to return and/or a known time period to pass before reconnecting loads was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Ending the Load Shed in Response to Frequency or a Known Amount of Time References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, restoring power supply to loads after the risk of an overload has been avoided—

combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Time Responsive to User Configuration, Load Priority, or an Unavoidable Electronic Circuit Propagation Delay References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose the known time interval varying depending on user configuration, load priority, or an unavoidable electronic circuit propagation delay, in at least claim elements 7, 13, 14, 26, and 27, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Time Responsive to User Configuration, Load Priority, or an Unavoidable Electronic Circuit Propagation Delay References”) to render obvious claims that may require such or similar features.

- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Schweitzer
- Sullivan
- Tsukida
- Wareham
- Wedel I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above

exemplary Time Responsive to User Configuration, Load Priority, or an Unavoidable Electronic Circuit Propagation Delay References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Time Responsive to User Configuration, Load Priority, or an Unavoidable Electronic Circuit Propagation Delay References, varying the known time interval that passes before shedding or reconnecting loads depending on user configuration, load priority, or an unavoidable electronic circuit propagation delay was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Time Responsive to a User Configuration, Load Priority, or an Unavoidable Electronic Circuit Propagation Delay References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, shedding loads only to prevent or stop an actual load and reconnecting loads only when the risk of overload has passed—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Ending a Load Shed in Response to Voltage, Frequency, Total Load, or Total Current References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose not reconnecting loads after a load shedding in response to a measured voltage, frequency, total load, or total current, in at least claim elements 14, 16, and 30, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Delaying the End of a Load Shed in Response to Voltage, Frequency, Total Load, or Total Current References”) to render obvious claims that may require such or similar features.

- AAPA

- Baldassarre
- Cummins Prior Art
- Espeut II
- Gull III
- PC Prior Art
- Tsukida
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Delaying the End of a Load Shed in Response to Voltage, Frequency, Total Load, or Total Current References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Delaying the End of a Load Shed in Response to Voltage, Frequency, Total Load, or Total Current References, not reconnecting loads after a load shed until after voltage, frequency, total load, or total current returns to acceptable levels was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Delaying the End of a Load Shed in Response to Voltage, Frequency, Total Load, or Total Current References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, reconnecting loads only when the risk of overload has passed—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Responding to an Installer's Inputs References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a load coupler device with a processor circuit that is responsive to inputs to the user input circuit that can open and close the contactor, in at least claim elements 1[.3], 5, 6, 13–15, 17[.3.4], 17[.4], 19–20, and 26–28, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Responding to an Installer's Inputs References”) to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan
- Wedel I
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Responding to an Installer's Inputs References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the

teachings of the foregoing Responding to an Installer's Inputs References, a load coupler device opening and closing in response to inputs to a user input circuit was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Responding to an Installer's Inputs References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, manually shed or restore loads that have shed when users choose to test a system or override a predetermined priority—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Assigning a Name or Identifier References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose assigning a name or identifier to a load coupler with a user input, in at least claim elements 5 and 19, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Assigning a Name or Identifier References”) to render obvious claims that may require such or similar features.

- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Sullivan

- Wareham
- Wedel I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Assigning a Name or Identifier References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Assigning a Name or Identifier References, assigning a name to a load coupler with a user input was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Assigning a Name or Identifier References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, managing multiple load shed circuits from a single user interface—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Additionally, claims 5 and 19 of the '618 Patent describe assigning a name or identifier—something claimed for what it communicates rather than its functionality. This is not material to patentability. *See, e.g., Astrazeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1063–65, (Fed. Cir. 2010), *King Pharmaceuticals, Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1280 (Fed. Cir. 2010). Accordingly, claims 5 and 19 of the '618 Patent claim unpatentable subject matter. To the extent that they do claim patentable subject matter, claims 5 and 19 of the '618 Patent are anticipated and/or rendered obvious by all prior art references cited above which disclose user input. *See, e.g., In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983).

Configuring a System During Installation References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose an installer configuring a load control apparatus at the time of installation, in at least claim elements 1[.3], 6, 13, 14, 17[.3.4], 20, and 26, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Configuring a System During Installation References”) to render obvious claims that may require such or similar features.

- AAPA
- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Schweitzer
- Sullivan
- Wareham
- Wedel I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Configuring a System During Installation References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown

in the teachings of the foregoing Configuring a System During Installation References, configuring a load control apparatus was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Configuring a System During Installation References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, provide information about a power source and an initial priority for load shed circuits—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Providing Lower Voltage Power to a Microcontroller References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose providing lower voltage power to a processor circuit, in at least claim elements 4 and 29, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Providing Lower Voltage Power to a Microcontroller References”) to render obvious claims that may require such or similar features.

- Baldassarre
- Cummins Prior Art
- Espeut II
- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- Sullivan
- Wareham

- Wedel I

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Providing Lower Voltage Power to a Microcontroller References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Providing Lower Voltage Power to a Microcontroller References, providing lower voltage power to a processor circuit was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Providing Lower Voltage Power to a Microcontroller References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, processor circuits that require lower voltage than other loads in a home or business—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Containing Components in an Appropriate Enclosure References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose containing a contactor, power supply, processor and user input circuit within a UL approved enclosure, in at least claim 4, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Containing Components in an Appropriate Enclosure References”) to render obvious claims that may require such or similar features.

- Baldassarre
- Cummins Prior Art
- Espeut II

- Generac Prior Art
- Gull III
- Gull IV
- Intellitec Prior Art
- PC Prior Art
- Wedel I
- Wareham

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Containing Components in an Appropriate Enclosure References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Containing Components in an Appropriate Enclosure References, containing components of a load management apparatus in an appropriate container was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Containing Components in an Appropriate Enclosure References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, isolate and protect electrical components to prevent risks like fire and electrical shock—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(c) '857 Patent²⁰

Like the above patents, the '857 Patent relates to a “method and apparatus for controlling the total load presented to an AC power source such as a generator or inverter used to provide backup or portable power.” '857 Patent at Abstract. In the '857 Patent, the “frequency of the output AC power is controlled in response to the loading on the power source.” *Id.* Doing so provides “information about that loading of the power source which is carried by the AC power itself, thus reducing or eliminating the need for traditional wired and wireless communications.” *Id.* Controlling the frequency in this manner allegedly allows a “power source to indicate an overload, with the loads being responsive to that overload frequency to reduce the load and thereby alleviate the overload.” *Id.*

As admitted by the '857 Patent and disclosed in the prior art, communicating overload conditions to other components or devices was well known. Moreover, it was well known to monitor system parameters to identify overload conditions—these parameters commonly included the A.C. frequency of the output power, the voltage, the current, the distortion of the A.C. frequency, etc. Furthermore, it was well known for devices to react to changes in frequency to manage loads—this process was referred to as under-frequency load shedding as well as by other names for decades. Finally, controlling frequency to be a desired frequency was well known.

Given the foregoing, each discrete component recited in the '857 Patent's asserted claims was well known to a person of skill in the art. Communicating overload conditions as detected by conventional means via frequency droop was already known—systems that control their frequency were known to include under-frequency load shedding mechanisms. As such, systems existed that

²⁰ Defendant incorporates by reference all motivations to combine and grounds for invalidity discussed in the parallel IPRs filed against the '857 Patent. *See, e.g.*, IPR2026-00022, Paper No. 3; IPR2026-00023, Paper No. 3; IPR2026-00024, Paper No. 3.

disclosed all limitations of the '857 Patent's asserted claims. Moreover, such systems would have been obvious to one of skill in the art—each necessary component was known, and each component is being used for its known purpose. Thus, the claims are obvious as anticipated or obvious, or both.

The identified references are in the same or similar technical fields, address the same technical issues, and suggest similar solutions. Indeed, the need for communicating using frequency and eliminating the need for dedicated signal lines, *id.*, as well as using load shedding to avoid overloads, *id.*, was already recognized in the prior art and the field of the invention and would have provided a person of ordinary skill in the art motivation to combine the prior art references identified as to this patent.

For example, Kamel discloses a system for enhancing MicroGrid Performance after islanding (disconnecting) from the Power Grid. Kamel at 605. When a fault occurs, the Kamel system transfer to island mode. *Id.* In island mode, the system must engage in “active power-frequency control.” *Id.* at 610. When doing so, inverters “droop” their frequency to control power output based on the amount of power available, all without communicating with other inverters. *Id.* Moreover, Kamel specifically notes the importance of a “backup load shedding strategy” even in situations where frequency is being controlled. *Id.* at 611.

Lasseter III serves as another example. It discloses a method of controlling inverter outputs of micro sources in a microgrid. Lasseter III at Abstract. Specifically, Lasseter III discloses power controllers that reduce the operating frequency of the inverter to increase output power. *Id.* It notes that the “fundamental frequency in an inverter is typically derived from an internal clock that does not change as the system is loaded.” *Id.* ¶ [0012]. It notes that distributed inverters (which the industry was trending toward using) could not communicate and coordinate like more traditional

utility power sources. *Id.* ¶ [0013]. The method it discloses does not require any communication or coordination among the different micro sources. *Id.* ¶ [0014].

Yokoyama I and Yokoyama II similarly discloses a similar problem and solution to the one claimed by the '857 Patent. Yokoyama I sought to eliminate a signal line provided especially for separating a load selectively. Yokoyama I at Abstract; *see also* Yokoyama II at Abstract. To do so in a system involving an inverter, and a battery with a plurality of loads, Yokoyama recites controlling the output frequency such that it droops the frequency when the battery capacity is being drawn down too quickly. Yokoyama I at Abstract; *see also* Yokoyama II at Abstract. When that happens, the loads are programmed to recognize the decrease in frequency and would shed the loads with which they are associated. Yokoyama I at Abstract; *see also* Yokoyama II at Abstract.

Additional references similarly discuss the same identified problem and similar solutions:

- Donnelly discloses: “Some electrical power distribution systems are ever-changing dynamic systems and operations are often concerned with balancing generation with load. Frequency of the voltage of the electrical energy may be used as an indicator of variances between generation of electrical energy and usage of electrical energy by loads coupled with the electrical power distribution system. For example, when demand exceeds generation, the frequency of the electrical energy on the electrical power distribution system may drop, and conversely, when there is excess electrical energy available, the frequency increases. Over a given 24 hour period, it is desired to balance energy surplus and deficit so the average frequency is 60 Hz, or other desired frequency. Typically, control of the state of the electrical power distribution system is implemented by controlling operations of generators coupled with the system. For example, at times of increased demand, the output of generators may be increased and/or other generators may be brought on-line to assist with supplying the electrical energy. In addition, spinning reserves may be utilized to accommodate unexpected significant fluctuations in demand for electrical energy. Provision of spinning reserves is costly, and much of the time, not used.” Donnelly at [0004]–[0005].
- Davis discloses a “decentralized load shedding device turns off a load in response to determining that an electric grid is approaching its maximum operating point.” Davis at Abstract. Faced with the problem of blackouts, Davis proposes a “centralized demand response by utility companies” as “one solution to prevent or at least alleviate the occurrence of blackouts.” Davis at 1:10–30. Davis’ solution

“[w]hen an electric grid reaches a threshold of its maximum operating capacity” is for “the electric grid [to] lower its operating frequency from a first frequency to a lower second frequency to account for the additional demand on the electric grid.” *Id.* at 1:34–38.

- Shimizu discloses a portable AC power supply device that “improve the starting characteristics while reducing temporary overload on the power supply side when starting equipment such as an induction motor in which a large starting current flows temporarily.” Shimizu at Abstract. When “a current detection circuit 5 for detecting whether or not an overload is caused by the load current signal” detects an overload, Shimizu prescribes “a frequency lowering means 7 for automatically lowering the frequency of the sine wave reference signal in the overloaded state.” *Id.*
- Hatziargyriou discusses various systems employing the state-of-the art microgrid technology (in 2007). Given the complexity and burden of additional communication hardware and technology, many of the systems involve “operation of generators is controlled locally by power electronic devices incorporating droop characteristics that respond to locally monitored frequency and voltage.” Hatziargyriou at 83.
- Wedel I discloses a “transfer mechanism and method are provided for transferring the supply of electrical power on a load between a utility source and a stand-by electrical generator wherein load includes an essential load and a secondary load.” Wedel I at Abstract. “A load shed controller is operatively connected to the output of the transfer switch for monitoring the electrical power supplied to the secondary load,” and it “terminates the electrical power supplied to the secondary load in response to the generator being overloaded.” *Id.*
- Lasseter I concerns the “distribution system problems” involved in power generation. Lasseter I at Abstract. It notes that “[m]anaging significant levels of distributed energy resources (DERs) with a wide and dynamic set of resources and control points can become overwhelming.” *Id.* To solve this problem, Lasseter I prescribes “small clusters or microgrids, with distributed optimizing controls coordinating multimicrogrids.” *Id.* “The clustered sources and loads can operate in parallel to the grid or as an island.” *Id.*
- Eckroad’s invention “provides a method, computer program product, and apparatus and control system and method for providing substantially uninterrupted power to a load.” Eckroad at Abstract. Embodiments of the disclosed invention include “a control system coupled with an electrical power storage subsystem and a electrical power generator.” *Id.* “[T]he control system is an integrated closed loop control system that includes a current control system and a voltage control system,” and can be controlled between various modes for utilizing different power sources when grid power is otherwise insufficient. *Id.*

- Lasseter II discloses a “power electronics interface in a microsource controller allows efficient connection in a power system of small, low cost and reliable distributed generators such as microturbines, fuel cells and photovoltaic.” Lasseter II at Abstract. Under its invention, “[a] collection of sources and loads can connect to or isolate from the utility grid in a rapid and seamless fashion, each inverter can respond effectively to load changes without requiring data from other sources, and voltage sag and system imbalances can be corrected.” *Id.*
- Lopes I “describes and evaluates the feasibility of control strategies to be adopted for the operation of a microgrid when it becomes isolated.” Lopes at Abstract. It notes that “must have the ability to operate stably and autonomously,” and that “[a]n evaluation of the need of storage devices and load shedding strategies is” disclosed. *Id.*
- Sunny Island and Generac Prior Art disclose various products that solve the problems identified in the above references or could be (and have been) used in systems that do the same.

As shown by these exemplary references, there were common objectives and solutions that predated the patent, such that a person of ordinary skill in the art would have been motivated to combine these and other references.

Additionally, market forces demanded that the efficiencies and functionality provided by backup inverter systems become easier to deploy in environments where that were setup for traditional load shedding—that is, with distributed load modules that looked for natural frequency droop from rotation power sources. Moreover, market forces demanded that the efficiencies and functionality provided by load shedding be available despite the added need for communicating and the costs associated therewith. Thus, one of skill in the art would have been motivated to combine or modify references using known methods that one of skill in the art would have recognized as offering improvements to solutions of that time. The references identified above, *see supra* Sections IV.A.2, IV.B.2, and IV.C, describe solutions that were known to offer improvements and thus one of skill in the art would have been motivated to combine or modify combined references to include such improvements.

Because the Asserted Claims simply arranges old elements known in the field with each performing the same function it had been known to perform and yields no more than what one would expect from such an arrangement, combinations of the prior art are obvious. At the time of the alleged invention, there were a finite number of predictable solutions, and a person of ordinary skill in the art had good reason to pursue or combine known options and related applications.

In sum, motivations to modify or combine the identified references including the references listed can be found via, for example, discussions in the cited references, the state of the art discussed in the references, and the knowledge of one of ordinary skill in the art. One of ordinary skill in the art would have been motivated to combine these references, because these references relate to common objectives and subject matter. The references share commonalities in terms of their general subject matter as well as the types of equipment, products, systems, or methods used. Further, the prior art references explicitly or implicitly reference other prior art references, which would motivate one of skill in the art to combine them. These references are within the same or similar fields and are directed to similar subject matter. Additionally, the references, and any products, devices, or processes described in the references, existed or were invented in the same time period providing further motivation for combination. Further elaboration and information shall be provided with Defendant's expert reports.

In view of the following, Defendant provides the follow non-limiting combinations, which are not intended to be exhaustive, as there are many possible combinations of the prior art listed herein and it is not practical, particularly at this early stage prior to further factual investigation, to identify and list all potentially relevant combinations. In particular, the Asserted Claims are rendered obvious under 35 U.S.C. § 103 in view of at least, and without limitation, the following exemplary combinations:

Exemplary Combinations²¹
Kamel in view of a Person of Ordinary Skill in the Art
Lopes I in view of a Person of Ordinary Skill in the Art
Lasseter I in view of a Person of Ordinary Skill in the Art
Lasseter II in view of a Person of Ordinary Skill in the Art
Lasseter III in view of a Person of Ordinary Skill in the Art
Yokoyama I/II in view of a Person of Ordinary Skill in the Art
Davis in view of a Person of Ordinary Skill in the Art
Shimizu in view of a Person of Ordinary Skill in the Art
Hatziargyriou in view of a Person of Ordinary Skill in the Art
Eckroad in view of a Person of Ordinary Skill in the Art
Baldassarre in view of a Person of Ordinary Skill in the Art
Miller in view of a Person of Ordinary Skill in the Art
Tsukida in view of a Person of Ordinary Skill in the Art
Wedel I in view of a Person of Ordinary Skill in the Art
Generac Prior Art in view of a Person of Ordinary Skill in the Art
Sunny Island in view of a Person of Ordinary Skill in the Art
CERTS in view of a Person of Ordinary Skill in the Art
AAPA in view of a Person of Ordinary Skill in the Art
Benya in view of a Person of Ordinary Skill in the Art
Benya in view of Kamel
Benya in view of Lopes I
Benya in view of Lasseter I
Benya in view of Lasseter II
Benya in view of Lasseter III
Benya in view of Sunny Island
Benya in view of Generac Prior Art
Benya in view of Yokoyama I/II
Benya in view of Shimizu
Lasseter I in view of Kamel
Lasseter I in view of Lopes I
Lasseter I in view of Wedel I
Lasseter I in view of Generac Prior Art
Lasseter I in view of Sunny Island
Lasseter I in view of CERTS
Lasseter I in view of Tsukida
Lasseter II in view of Kamel
Lasseter II in view of Lopes I
Lasseter II in view of Wedel I
Lasseter II in view of Generac Prior Art
Lasseter II in view of Sunny Island

²¹ Defendant incorporates by reference all combinations discussed in the parallel IPRs filed against the '857 Patent. *See, e.g.*, IPR2026-00022, Paper No. 3; IPR2026-00023, Paper No. 3; IPR2026-00024, Paper No. 3.

Exemplary Combinations²¹
Lasseter II in view of Tsukida
Lasseter III in view of Kamel
Lasseter III in view of Lopes I
Lasseter III in view of Wedel I
Lasseter III in view of Generac Prior Art
Lasseter III in view of Sunny Island
Lasseter III in view of CERTS
Lasseter III in view of Tsukida
Yokoyama I/II in view of Kamel
Yokoyama I/II in view of Lopes I
Yokoyama I/II in view of Wedel I
Yokoyama I/II in view of Generac Prior Art
Yokoyama I/II in view of Sunny Island
Yokoyama I/II in view of CERTS
Yokoyama I/II in view of Tsukida
Davis in view of Kamel
Davis in view of Lopes I
Davis in view of Wedel I
Davis in view of Generac Prior Art
Davis in view of Sunny Island
Davis in view of CERTS
Davis in view of Tsukida
Shimizu in view of Kamel
Shimizu in view of Lopes I
Shimizu in view of Wedel I
Shimizu in view of Generac Prior Art
Shimizu in view of Sunny Island
Shimizu in view of CERTS
Shimizu in view of Tsukida
Hatziargyriou in view of Kamel
Hatziargyriou in view of Lopes I
Hatziargyriou in view of Wedel I
Hatziargyriou in view of Generac Prior Art
Hatziargyriou in view of Sunny Island
Hatziargyriou in view of CERTS
Hatziargyriou in view of Tsukida
Generac Prior Art in view of Kamel
Generac Prior Art in view of Lopes I
Generac Prior Art in view of Wedel I
Tsukida
Sunny Island in view of Kamel
Sunny Island in view of Lopes I
Sunny Island in view of Wedel I
Sunny Island in view of Tsukida

Exemplary Combinations²¹
CERTS in view of Kamel
CERTS in view of Lopes I
CERTS in view of Wedel I
CERTS in view of Tsukida

In addition to the above exemplary combinations, it would have been obvious to combine any of the anticipatory references or exemplary combinations with any of the applicant admitted prior art (“AAPA”) disclosed in the Asserted Patents. Moreover, it would have been obvious to combine any of the anticipatory references or exemplary combinations with any of the references in the following illustrative categories.

Controlling Frequency References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose “control[ing] [a] frequency of the output A.C. power to have a first frequency when the power source is not overloaded and a second frequency when the power source is overloaded or is near to being overloaded”²² in at least claim elements 1[b], 27[b], and 66[b][ii]–66[c]. such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Controlling Frequency References”) to render obvious claims that may require such or similar features.

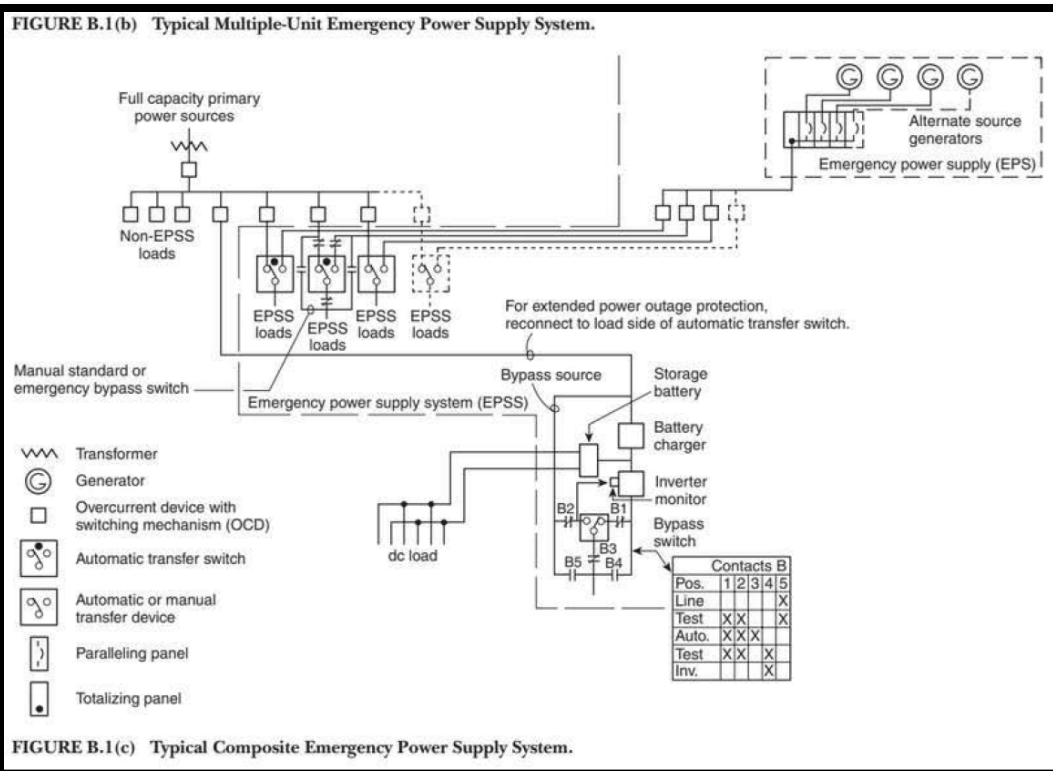
- Kamel
- Lopes I
- Davis
- Lasseter I
- Lasseter II

²² Though minor variations in wording exist in the claims, Defendants maintain that the identified references in each section meet the language for all identified claim limitations and present an adequate motion to combine in each instance. For further clarification on what is disclosed in each reference throughout this section, Defendant directs Plaintiff to each reference’s respective chart.

- Lasseter III
- Yokoyama I
- Yokoyama II
- Hatziargyriou
- Generac Prior Art
- Sunny Island
- Shimizu
- AAPA
- Benya
- Serban²³
- NFPA²⁴

²³ Serban at 2 (“The most used control method, both for classical DGs and for inverter-based DGs, is based on droops, which express the ration between the maximum frequency and power deviations.”); *id.* at figs. 2, 4–6.

²⁴ NFPA § 5.6.3.1 (“Governors shall maintain a bandwidth of rated frequency for any constant load (steady-state condition) that is compatible with the load.”); *id.* § 5.6.3.1.1 (“The frequency droop between no load and full load shall be within the range for the load.”); *id.* § 5.6.3.1.2 (“The frequency dip upon one-step application of the full load shall not be outside the range for the load, with a return to steady-state conditions occurring within the requirements of the load.”)



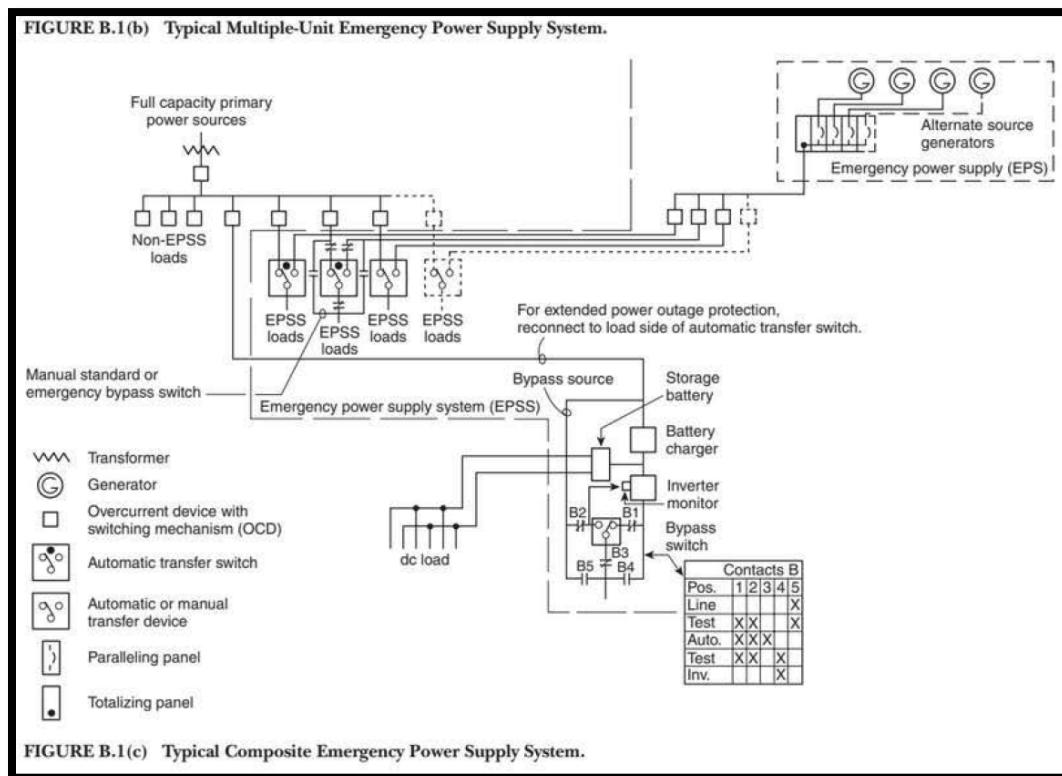
One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Controlling Frequency References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Controlling Frequency References, controlling frequency such that it is one frequency during normal operation and another when the device is overloaded was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Controlling Frequency References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, signaling an overload—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Non-Utility Type Power Source References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose ” a non-utility type power source comprising an inverter which provides single or multiple phase output A.C. power to one or more of a plurality of loads,” in at least claim elements 1[a], 27[a], and 66[a], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Non-Utility Type Power Source References”) to render obvious claims that may require such or similar features.

- AAPA
- Hatziargyriou
- Generac Prior Art
- Wedel I
- Lasseter I
- Sunny Island
- Eckroad
- Yokoyama I
- Yokoyama II
- Shimizu
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- Benya
- Miller
- Baldassarre

- NFPA



One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Non-Utility Type Power Source References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Non-Utility Type Power Source References, back-up power sources and receiving power from distributed generation power sources was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Non-Utility Type Power Source References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, having methods of receiving power when the grid fails—combined with a finite number of identified, predictable

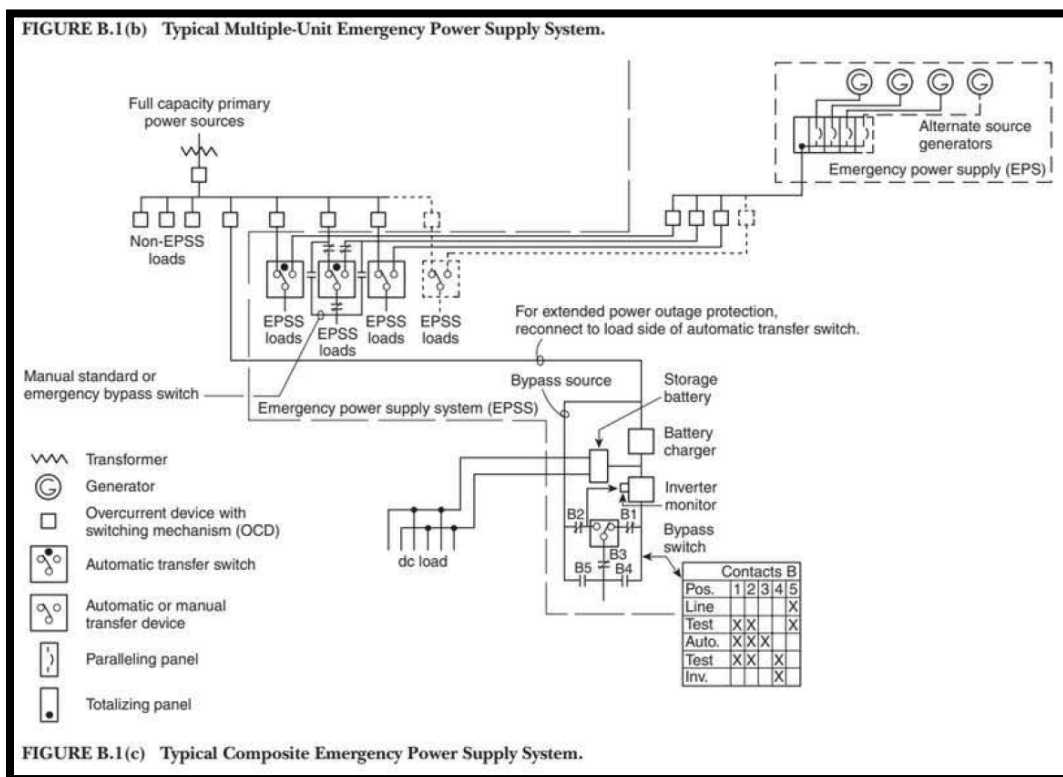
solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Power-Sensing Circuit References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose “a power sensing circuit which may be part of the power source or otherwise and is responsive to the timely amount of the output A.C. power,” in at least claim elements 1[b], 27[b], and 66[c], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Power-Sensing Circuit References”) to render obvious claims that may require such or similar features.

- AAPA
- Hatzargyriou
- Generac Prior Art
- Wedel I
- Lasseter I
- Sunny Island
- Eckroad
- Yokoyama I
- Yokoyama II
- Shimizu
- Davis
- Lasseter II
- Lopes I
- Kamel
- Lasseter III

- Benya
- Miller
- Baldassarre
- Tsukida
- Kusko²⁵
- Chassin²⁶
- NFPA²⁷



²⁵ See generally Kusko at 201–13.

²⁶ Chassin at Figs. 1–5.

²⁷ NFPA § 5.2.3 (“The energy converter for Level 1 systems shall be specifically designed, assembled, and tested to ensure system operation under the following condictions: (1) Short circuits,” “(2) Load surges due to motor starting,” (4) Silicon controlled rectifier (SCR) controllers,” “(6) Overspeed, overtemperature, or overload,” “(7) Adverse environmental conditions.”); *id.* at tbl. 5.6.5.2; *id.* at § 5.6.9.8–5.6.9.9; *id.* § 6.2.2.

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Power-Sensing Circuit References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Power-Sensing Circuit References, sensing the parameters of power being delivered in a system was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Power-Sensing Circuit References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, determining the status of power being delivered by a power supply to make intelligent decisions to improve system functioning—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Processor Circuits for Load Management and Shedding References

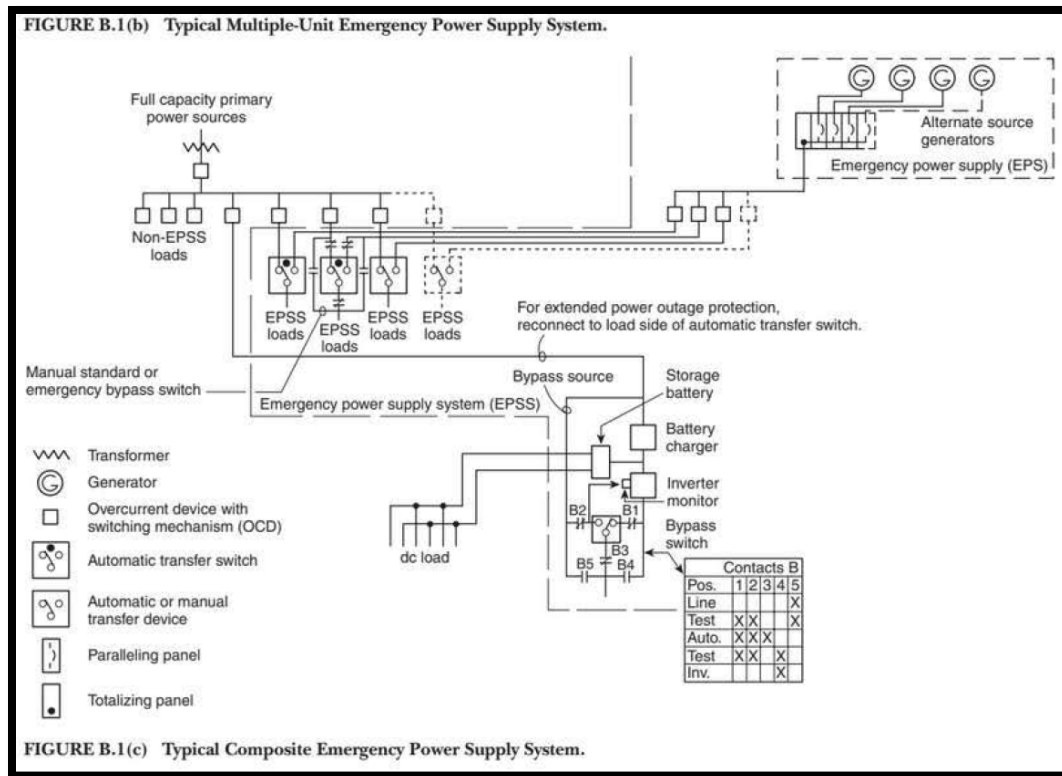
To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a “processor circuit comprising one or more processors responsive to the output A.C. power, the processor circuit operating in response to the occurrence of the second frequency to control the output A.C. power consumed by at least one load of the one or more loads thereby helping to prevent or alleviate an overload of the power source,” for example, by “wherein when the one or more loads demand more power than the inverter can produce, the power source changes the A.C. power output frequency from the first frequency to the second frequency to signal the processor circuit to shed one or more of the plurality of loads to help the power source to recover from an overload,” in at least claim elements 1[c], 2, 27[c], and 66[b]–[c], such reference can be combined with the corresponding disclosures from any one or more of the following prior art

references (“Processor Circuits for Load Management and Shedding References”) to render obvious claims that may require such or similar features.

- AAPA
- Hatziargyriou
- Generac Prior Art
- Wedel I
- Lasseter I
- Sunny Island
- Yokoyama I
- Yokoyama II
- Shimizu
- Davis
- Lopes I
- Kamel
- Lasseter III
- Benya
- Miller
- Baldassarre
- Tsukida
- Serban²⁸

²⁸ Serban at 3 (“Moreover, the MG should include deferrable loads, which can be disconnected in the energy shortage periods, produced mainly by excessive MG loading, to prevent the system failure. Fig. 6 illustrate a load-shedding characteristic where the load disconnection can be accomplished in one or several stages (three in this case), and the switching point must include a hysteresis cycle to avoid oscillations. In classical power systems, the first load shedding stage occurs for a frequency deviation of -1Hz, during which 10% of the loads are disconnected [17]. In

- Chassin²⁹
- NFPA³⁰



One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Processor Circuits for Load Management and Shedding References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Processor Circuits for Load Management and Shedding

MGs the threshold may be lower, according to the frequency control configuration, so the loadshedding process not to interfere with the primary control.”); *id.* at figs. 4–6.

²⁹ Chassin at Figs. 1–5.

³⁰ NFPA § 5.2.3 (“The energy converter for Level 1 systems shall be specifically designed, assembled, and tested to ensure system operation under the following condictions: (1) Short circuits,” “(2) Load surges due to motor starting,” (4) Silicon controlled rectifier (SCR) controllers,” “(6) Overspeed, overtemperature, or overload,” “(7) Adverse environmental conditions.”); *id.* at tbl. 5.6.5.2; *id.* § 6.3; *id.* § 6.5.

References, using a computer to determine something has been signaled to control or shed loads was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Processor Circuits for Load Management and Shedding References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, reducing the amount of load on a system by reducing the power consumed or shedding loads—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

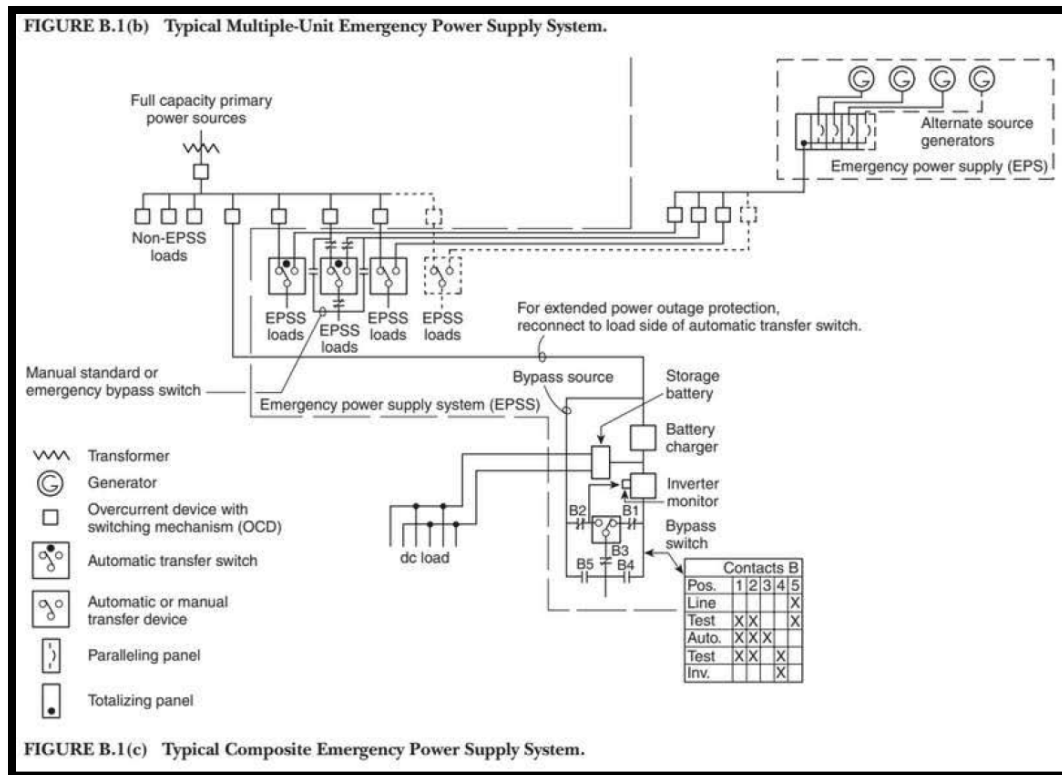
Backup Power Source References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a power source that is used as a backup power source when utility power fails, in at least claim elements 1[a], 3, 27[a], and 66[a], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Backup Power Source References References”) to render obvious claims that may require such or similar features.

- AAPA
- Hatziargyriou
- Generac Prior Art
- Wedel I
- Lasseter I
- Sunny Island
- Eckroad
- Yokoyama I

- Yokoyama II
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- Miller
- Baldassarre
- Kusko³¹
- NFPA

³¹ See generally Kusko at 119–145 (discussing standby power systems and uninterruptible power sources); *id.* at 189–200 (same, focusing on standby power systems); *id.* at fig. 9.1a–b; *id.* at 145 (“The uninterruptible power system is necessary to provide reliable power to critical loads that cannot tolerate interruption. The most widely used equipment is the battery inverter UPS module that is available in power ratings from 100 W to 1000 kW (and higher) at all commercial input and output voltage and phase configurations. Energy storage is usually provided by flooded or VLRA-type batteries for full-load operating times in the range of minutes. Recently developed energy-storage alternatives include flywheels and fuel cells.”); *id.* at figs. 13.5, 13.6, 13.10



One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Backup Power Source References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Backup Power Source References, backup power sources—that provide power when a primary power source (e.g., utility grid, power grid, main generator, etc.) failed or fell below acceptable standards—were well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Backup Power Source References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, ensuring an alternate source of power is available to power loads, especially critical loads, at times when the primary power source was either insufficient or unable

to power the same—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

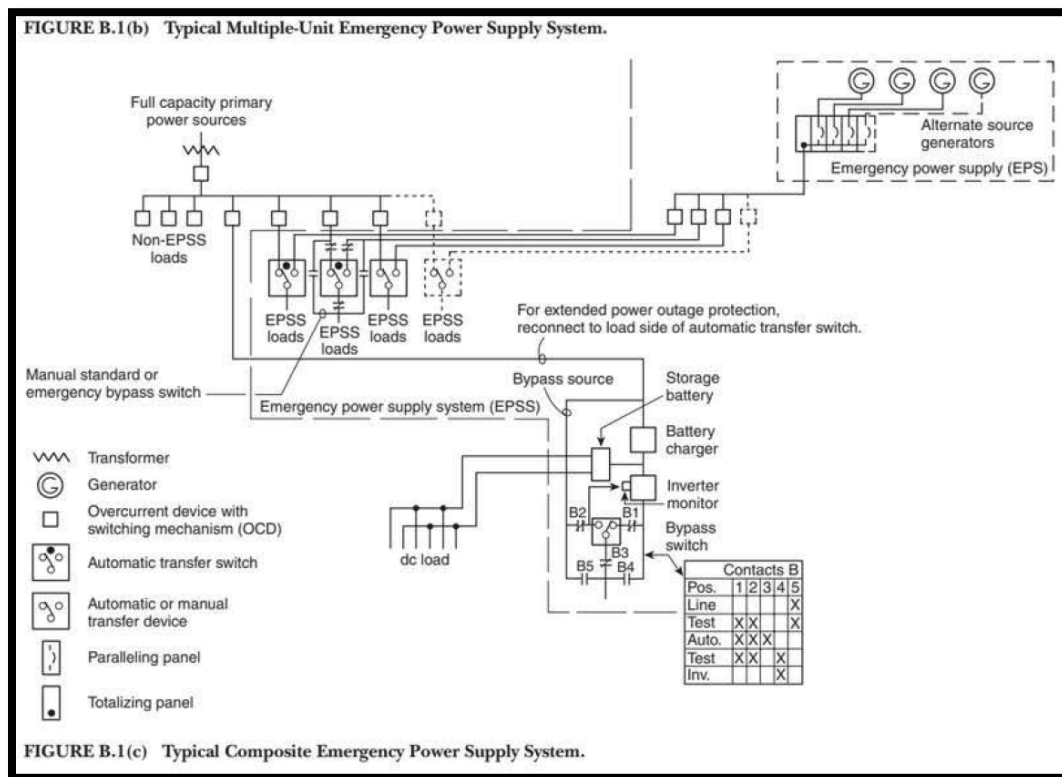
Rechargeable Battery References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose an “the inverter is responsive to at least one rechargeable battery to provide the output A.C. power,” in at least claim elements 5–10,³² such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Rechargeable Battery References”) to render obvious claims that may require such or similar features.

- AAPA
- Hatziargyriou
- Wedel I
- Lasseter I
- Sunny Island
- Eckroad
- Yokoyama I
- Yokoyama II
- Lasseter II
- Lasseter III
- Miller

³² Controlling the charging from various types of power sources would also be obvious, e.g., controlling the charging of at least one rechargeable battery, controlling charging from at least one power grid, controlling charging from at least one solar panel, controlling charging from non-grid internal combustion powered electrical power sources, controlling charging from (and selecting between) any of these power sources, as claim in claims 6, 7, 8, 9 and 10.

- Kusko³³
- NFPA



One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Rechargeable Battery References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Rechargeable Battery References, utilizing energy storage methods that could be

³³ See generally Kusko at 119–145 (discussing standby power systems and uninterruptible power sources); *id.* at 189–200 (same, focusing on standby power systems); *id.* at fig. 9.1a–b; *id.* at 145 (“The uninterruptible power system is necessary to provide reliable power to critical loads that cannot tolerate interruption. The most widely used equipment is the battery inverter UPS module that is available in power ratings from 100 W to 1000 kW (and higher) at all commercial input and output voltage and phase configurations. Energy storage is usually provided by flooded or VLRA-type batteries for full-load operating times in the range of minutes. Recently developed energy-storage alternatives include flywheels and fuel cells.”); *id.* at figs. 13.5, 13.6, 13.10

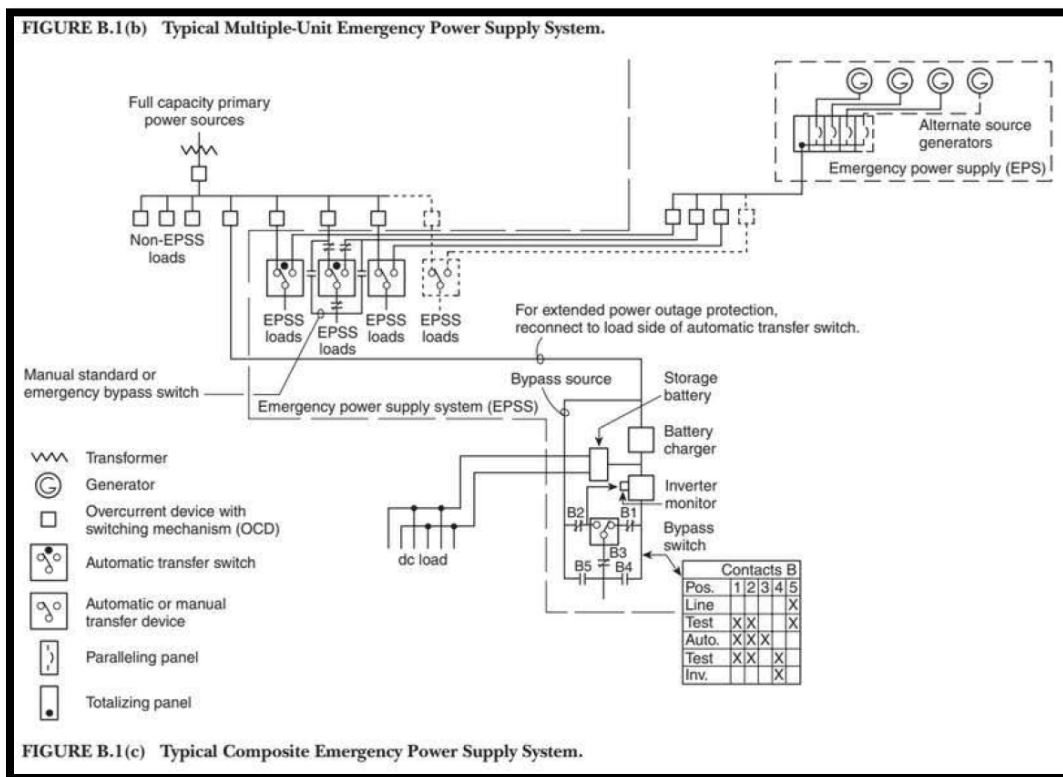
replenished (especially at times where power was cheap or more accessible than at other times, e.g., solar panels during the day versus the night) was well-known in the art by the time of the Asserted Patents’ claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Rechargeable Battery References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, providing an energy storage method that required no parts, that could be replenished and store otherwise squandered energy from intermittent and/or green energy sources, and providing instant power in systems with low inertia due to the use of inverters—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Power Grid References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a “power system controls the charging of the at least one rechargeable battery,” in at least claim elements 7 and 10, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Power Grid References”) to render obvious claims that may require such or similar features.

- AAPA
- Hatziargyriou
- Wedel I
- Sunny Island
- Eckroad
- Lopes I
- Kamel

- Lasseter III
- Miller
- Baldassarre
- NFPA³⁴



One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Power Grid References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Power Grid References, charging a battery with inexpensive power grid power was well-known in

³⁴ NFPA § 5.1.1 ("The following energy sources shall be permitted to be used for the emergency power supply (EPS): . . . Liquid petroleum products at atmospheric pressure . . . Liquefied petroleum gas (liquid or vapor withdrawal)" . . . Natural or synthetic gas."); *id.* § 5.1.4 ("A public electric utility that has a demonstrated reliability shall be permitted to be used as the EPS where the primary source is by means of on-site energy conversion.")

the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Power Grid References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, paying for grid power when cheaper in demand-based power pricing models as well as generally saving power generally for times when grid power fails—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Solar Power References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose a “power system controls the charging of the at least one rechargeable battery from at least one solar panel,” in at least claim elements 8, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Solar Power References”) to render obvious claims that may require such or similar features.

- Hatziargyriou
- Lasseter I
- Sunny Island
- Eckroad
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- AAPA
- Miller

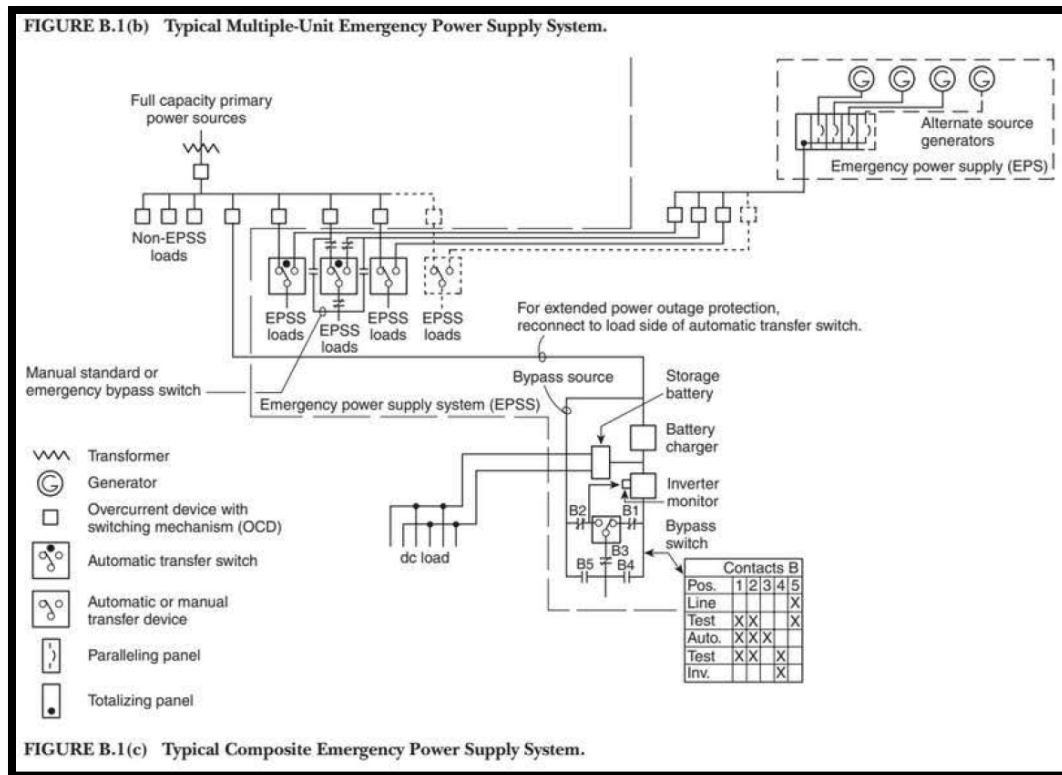
One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Solar Power References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Solar Power References, utilizing solar power to store excess power at times of high generation (e.g., during the day) and saving it for times of insufficient generation (e.g., during the night) was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Solar Power References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., needing to save power for times of low generation (e.g., nighttime), needing to offload excess generation during the day to avoid damaging loads or the solar panels, or saving power at times of low resale value to be sold back to the grid at times of higher resale value—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Internal Combustion Power Source References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose an “inverter is responsive to power provided by a generator comprising an internal combustion engine to provide the output A.C. power” or that “the power system controls the charging of the at least one rechargeable battery from a non-grid internal combustion powered electrical power source,” in at least claim elements 4 and 9, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Internal Combustion Power Source References”) to render obvious claims that may require such or similar features.

- Hatziargyriou
- Wedel I
- Lasseter I
- Sunny Island
- Eckroad
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- AAPA
- Miller
- Generac Prior Art
- NFPA³⁵

³⁵ NFPA § 5.1.1 (“The following energy sources shall be permitted to be used for the emergency power supply (EPS): . . . Liquid petroleum products at atmospheric pressure . . . Liquefied petroleum gas (liquid or vapor withdrawal)” . . . Natural or synthetic gas.”).



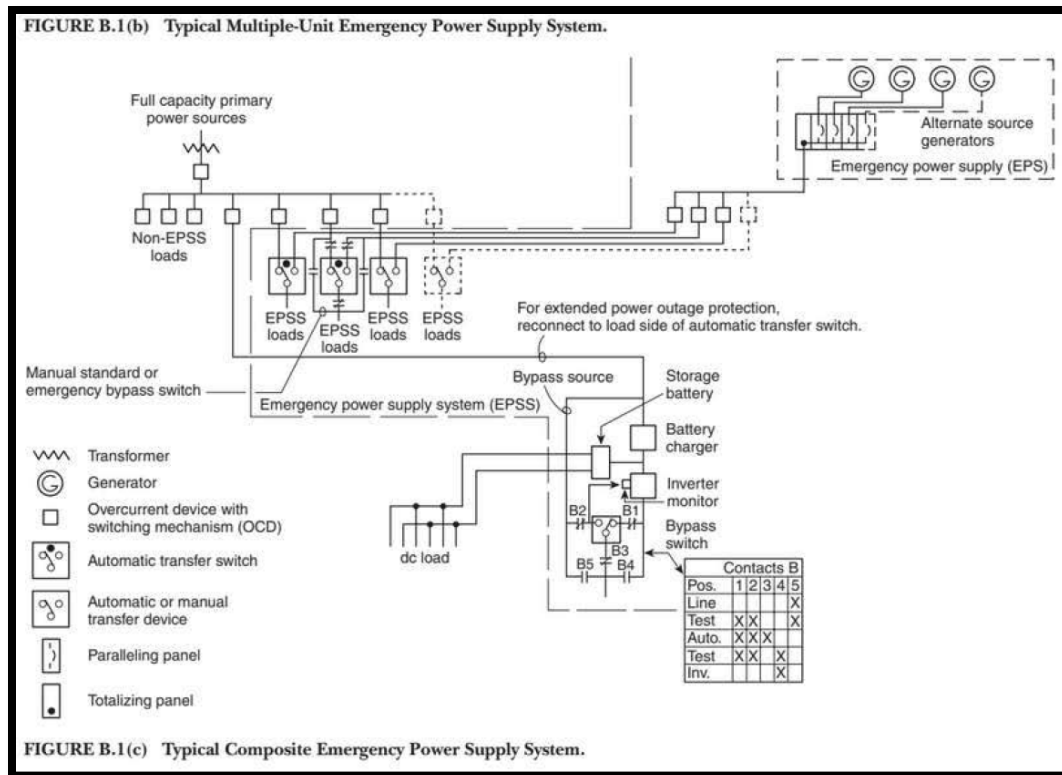
One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Internal Combustion Power Source References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Internal Combustion Power Source References, utilizing inverters that are responsive to internal combustion engines (for, *inter alia*, rectifying power from ac-dc-ac) and using said internal combustion engines to recharge batteries was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Internal Combustion Power Source References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, ensure quality power is delivered to a system, control the frequency and voltage output of power being delivered to a

system and/or loads, and having a power source that can rechargeable a battery at times of heavy load or abnormally long periods of primary power source downtime (e.g., in the context of uninterruptible power sources)—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Multiple Charging Power Sources References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose “a power grid and at least one solar panel are available to charge the battery and the power system controls the selection of at least one of the power grid and the at least one solar panel to charge the at least one rechargeable battery,” in at least claim element 10, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Multiple Charging Power Sources References”) to render obvious claims that may require such or similar features.

- Hatziargyriou
- Lasseter I
- Sunny Island
- Eckroad
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- AAPA
- Miller
- NFPA



One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Multiple Charging Power Sources References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Multiple Charging Power Sources References, utilizing multiple power sources for charging a battery was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Multiple Charging Power Sources References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, taking advantage of the distinguished benefits from different types of power sources relating to cost, efficiency, availability, as well as diversifying the different ways one can power a battery and/or ensure the battery is capable of sustained backup

power delivery—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Transfer Switch References

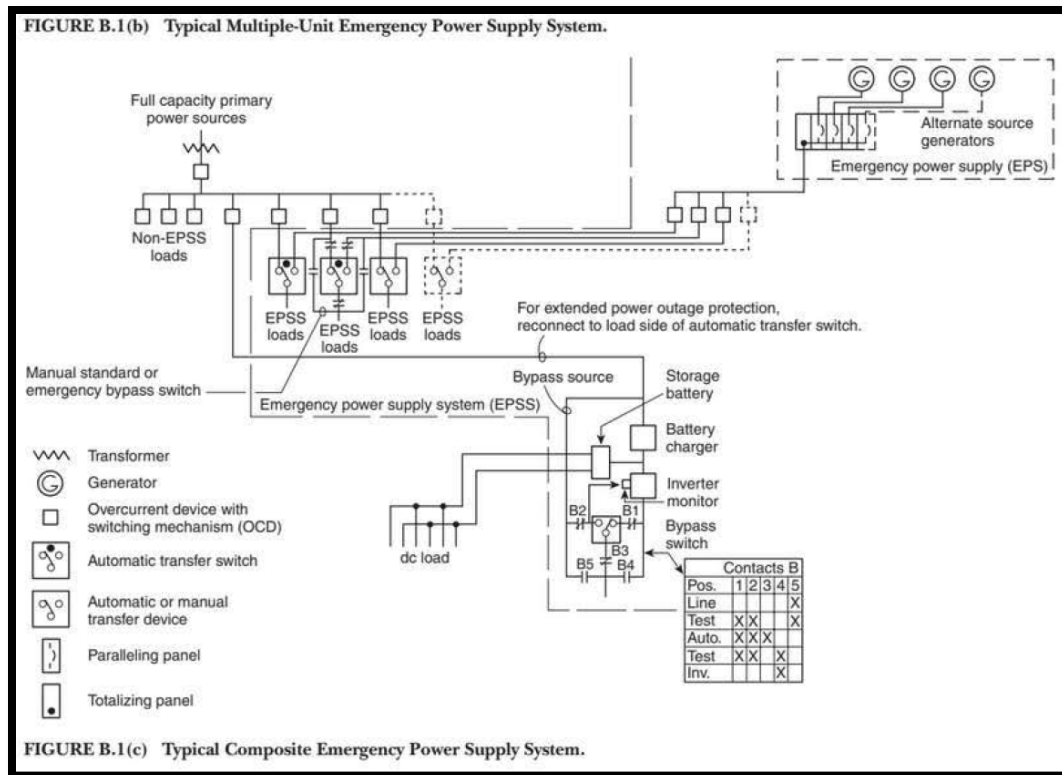
To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose “a transfer switch which may select a power grid or the power source to provide power to the one or more of a plurality of loads, the transfer switch outputting power from the grid power meets acceptable parameters and to output power from the power source when the grid power does not meet acceptable standards,” in at least claim element 13, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Transfer Switch References”) to render obvious claims that may require such or similar features.

- AAPA
- Generac Prior Art
- Wedel I
- Lasseter I
- Sunny Island
- Eckroad
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- Miller
- Baldassarre

- Kusko³⁶
- NFPA³⁷

³⁶ Kusko at 193 (“**UPS plus a Transfer Switch and an E/G Set:** An elementary standby power system to withstand long utility power interruptions and long UPS maintenance periods is shown in Figure 13.5. The system operates in the following ways: Normal-utility service. The UPS receives power from the UPS bus and delivers power to the load. The battery has been charged by utility power. Utility service is interrupted. The UPS receives power from its battery and continues to deliver power to the load. The E/G set starts. The transfer switch operates to supply generator power to the UPS. The UPS bus is transferred to the E/G set. The battery recharges. When utility service is restored, the process is reversed. UPS must be taken out of service. The E/G set is started. When it is up to speed, voltage, and frequency, the transfer switch operates. The UPS by-pass switch is closed to supply the load from the E/G set. The UPS is taken out of service. When the UPS is to be returned to service, the process is reversed.” (omitting bullets and paragraph spacing)); *id.* at figs. 13.5–13.6; *id.* at 194 (“**UPS plus Two Feeders and a Utility Transfer Switch:** An elementary standby power system utilizing two utility feeders from two substations is shown in Figure 13.6. In case of a feeder fault or failure, the utility transfer switch transfers the service to the alternate feeder. The UPS operates from its battery during the transition. Other loads, such as air conditioning, heating, and lighting, either continue to operate or must be restarted.”); *id.* at 198 (“The purpose for a transfer switch is shown in Figure 13-5. The switch connects the load, in this case a UPS, to either the utility source or to an E/G set. The operation is usually conducted when power from the utility line is interrupted and the output of the E/G set must supplement the capacity of the batteries of the UPS. The transfer switch has other functions, such as transferring between two feeders or transformers, and transferring power to a motor from a failed feeder to an alternate feeder.”).

³⁷ NFPA at 3.3.9.1 (“*Automatic Transfer Switch (ATS)*, Self-acting equipment for transferring the connected load from one power source to another power source.”); *id.* at 6.1–6.5



One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Transfer Switch References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Transfer Switch References, switching output from the power grid (when not delivering power in a sufficient quantity and quality, among other considerations) to another power source was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Transfer Switch References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, ensuring load specifications for power, including considerations such as quality, consistency, availability, overhead, and more, as well as avoiding anticipated interruptions from the power grid when its

output power indicates a future insufficiency—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Sinusoidal Power and Sine Wave References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose “one or more non-utility type power source comprising at least an AC power generating circuit which outputs sinusoidal single or multiple phase AC power which may be controllably coupled to one or more of a plurality of loads, the AC power having a plurality of parameters including at least a frequency, a voltage, sine wave distortion and a current which may range from zero to a maximum amount depending on the loading of the power source,” in at least claim elements 66[a] and 71, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Sinusoidal Power and Sine Wave References”) to render obvious claims that may require such or similar features.

- Lasseter I
- Sunny Island
- Eckroad
- Yokoyama I
- Yokoyama II
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- Benya
- Generac Prior Art

- Baldassarre³⁸
- Kusko³⁹
- Chassin⁴⁰

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above

³⁸ Baldassarre ¶ [0057] (“In accordance with the present invention, an energy management system is provided for automatically limiting the total instantaneous consumption of electrical energy in a residence having a plurality of energy consuming loads with different current demands, while maintaining the consumption level as high as possible without exceeding a predetermined peak total current demand and/or overloading the auxiliary or generator power source during an interruption in the utility power source and/or a power failure. It is contemplated that an interruption of primary or utility power may be considered anytime the power drops below a standard set in the program with regards to voltage, sine wave, Hertz, and/or any other means known in the art. Additionally, once the control system detects that the primary or utility power source has been restored and is performing at an acceptable level, the loads are switched back to the primary power source via the control system or an automatic transfer switch as known in the art.”)

³⁹ Kusko at 25 (“Distortion to the line-voltage waveforms can be caused by transient or continuous disturbances.”); *see also id.* 25–42 (discussing various kinds of distortion known in the art); *id.* Fig. 3.22 (same); *id.* at 110 (“Load equipment, such as switch-mode power supplies, can be designed to reduce harmonics in the load current, and also to reduce sensitivity to voltage disturbances. The supply system can be designed to reduce source impedance, to separate loads, and to avoid harmonic resonances.”); *id.* at 111 (“Before disturbances in power quality at a site can be corrected, the disturbance must be anticipated or identified. The objective of the correction must be established, and the correction method selected. The amplitude, waveform, and duration of voltage disturbances can be determined by measurement at the site, or by reports of typical disturbances made at the site or at other similar sites. The impact on the operation of equipment at the site is another measure of disturbances.”); *id.* at tbl 8.1 (listing “Voltage disturbance” including “[W]aveform distortion” and providing “Power-harmonic filters” as a solution); *id.* at 17 (“IEEE Standard 1159 [2.2] is entitled “IEEE Recommended Practice for Monitoring Electric Power Quality,” and as its title suggests, this standard covers recommended methods of measuring power-quality events. Many different types of power-quality measurement devices exist and it is important for workers in different areas of power distribution, transmission, and processing to use the same language and measurement techniques. In future chapters, we draw extensively from IEEE Standards 519 and 1159.”)

⁴⁰ Chassin at 12:63–14:37 (“these unstable transfers of power manifest themselves in the form of oscillations Power oscillations may be detected by monitoring power flows through a transmission corridor or by monitoring system frequency. . . . [P]ower management devices 16 may be configured to detect power oscillations and to minimize or eliminate the power oscillations before problems occur. . . . One exemplary corrective action includes shedding load.”); *id.* fig. 5.

exemplary Sinusoidal Power and Sine Wave References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Sinusoidal Power and Sine Wave References, sinusoidal waveforms for delivered AC power was well-known in the art by the time of the Asserted Patents' claimed invention, as was monitoring these sine waves for distortion as a means of detecting poor power quality or insufficient power and reacting to the same. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Sinusoidal Power and Sine Wave References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, employing redundant methods of detecting overloads (*e.g.*, in addition to frequency, current, voltage) as well as monitoring not just the amount of power delivered, but the quality of the power delivered as needed for sensitive electronics—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

Grid-Paralleling Power Source References

To the extent PSLC contends that an anticipatory reference or exemplary combination fails to disclose the frequency of the “AC power is responsive to the grid power frequency when the AC power is provided in parallel with grid power so that connected loads receive power from one or both of the power source and grid” or when the “AC power is not paralleled with the grid, its frequency is responsive in a manner that the frequency represents the loading of the power source,” in at least claim element 66[b], such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Grid-Paralleling Power Source References”) to render obvious claims that may require such or similar features.

- AAPA

- Hatziargyriou
- Lasseter I
- Sunny Island
- Eckroad
- Lasseter II
- Lopes I
- Kamel
- Lasseter III
- Miller

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Grid-Paralleling Power Source References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Grid-Paralleling Power Source References, paralleling secondary or backup power systems to grid power to deliver power to loads at the same time was well-known in the art by the time of the Asserted Patents' claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Grid-Paralleling Power Source References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, offsetting the cost of grid power at times when grid-power is more expensive, supplementing grid power such that the overall load on the grid is lessened cumulatively, and delivering power from power sources that cannot control their outputs or which would otherwise be damaged without the opportunity to discharge their generated power (*e.g.*, solar panels, mills, etc.)—combined with a finite number of

identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

VI. CLAIM CHARTS

Defendant identifies invalidity claim charts identifying disclosures in the references identified in Sections IV-V *supra* as to the Asserted Claims of the Asserted Patents are provided in attached Appendix A ('727 Patent), Appendix B ('618 Patent), and Appendix C ('857 Patent). The attached Appendices of these contentions are charts that specifically identify where each element of the Asserted Claims is found in the prior art. In addition, Defendant specifically incorporates by reference arguments and evidence disclosed in the other PSLC Proceedings (now pending or as filed in the future).

To the extent any limitation of the Asserted Claims are construed to have a similar meaning, or to encompass similar feature(s) and function(s), as apparently contended by PSLC in its Infringement Contentions, or later determined by the Court, and to the extent at least one claim chart in the attached Appendices identifies any prior art reference, or a portion thereof, as disclosing or teaching such similarly construed claim limitation, such identified prior art reference, or the portion thereof, and Defendant's contentions with respect to such claim limitation and such prior art reference as found in such claim chart, are incorporated by reference, and are part of, Defendant's invalidity contention with respect to the Asserted Claims that includes such similarly construed claim limitation.

The claim charts in these contentions provide example sections within the prior art references that teach or suggest each element of the Asserted Claims either expressly or inherently. These Invalidity Contentions set forth obviousness arguments based on the disclosures in each of the references, teachings well known at the time of filing, admitted prior art, and the knowledge of a person of ordinary skill in the art at the time the respective patent application was filed.

VII. OTHER GROUNDS FOR INVALIDITY

A. Invalidity Under 35 U.S.C. § 112

Defendant contends that certain claims of the Asserted Patents are invalid under 35 U.S.C. § 112 because: (1) the claims are indefinite; (2) the claims are not enabled; or (3) the claims lack adequate written description. Defendant's contentions that the following claims are invalid under § 112 are made in the alternative, and do not constitute, and should not be interpreted as, admissions regarding the construction or scope of the claims of the Asserted Patents, or that any of the claims of the Asserted Patents are not anticipated or rendered obvious by any prior art.

These contentions are based on Defendant's current understanding of Plaintiff's Infringement Contentions. To the extent Plaintiff contends that the prior art references identified above would not enable a person of ordinary skill to make or use the elements of the Asserted Claims against which they are cited, and to the extent Plaintiff contends that the Asserted Claims cover something different from what Defendant understand them to cover, the Asserted Claims may not comply with the enablement, written description, and/or definiteness requirements of § 112. Because compliance with the requirements of § 112 depends on the construction of those phrases—and no claim construction positions have been exchanged, no claim construction order issued, and no expert discovery undertaken—Defendant's positions on written description, enablement, and/or indefiniteness are necessarily preliminary at this early stage of the case. Defendant reserves all rights to amend or further revise these contentions as this case develops and in the case in accordance with the Court's Rules or as the Court otherwise authorizes.

1. Lack of Written Description and/or Enablement Under 35 U.S.C. § 112 (a)

The written description and enablement requirements are analyzed by comparing the claims with the disclosure in the specification. If the claimed invention does not appear in the

specification, the claim fails regardless of whether one of skill in the art could make or use the claimed invention. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1348 (Fed. Cir. 2010). To satisfy the written description requirement, the patentee must convey to those skilled in the art that, as of the filing date, the applicant was in possession of the invention, and demonstrate that possession by disclosing the invention in the specification. *See id.* at 1352. To satisfy the enablement requirement, a patentee must “describe the manner and process of making and using the invention so as to enable a person of skill in the art to make and use the full scope of the invention without undue experimentation.” *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1344-45 (Fed. Cir. 2005). A patent must also be precise enough to afford clear notice to what is claimed. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 899 (2014). A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. *Id.* at 898–99. The standard for assessing if a patent claim is sufficiently definite to satisfy the statutory requirement is whether “one skilled in the art would understand the bounds of the claim when read in light of the specification.” *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1358 (Fed. Cir. 2003).

To the extent the following limitations are definite (under 35 U.S.C. § 112 (b)), the applications that became the Asserted Patents fail to sufficiently describe or enable them as required by 35 U.S.C. § 112 (a):⁴¹

⁴¹ Listed claims also include all Asserted Claims dependent thereon, even if those claims are not individually listed.

(a) '727 Patent

Patent Term/Phrase	Relevant Claim(s)
“a processor circuit programmed to control the transfer switch and the generator to power the group of loads from the power grid when the power grid operates at an acceptable voltage and to cause one or more loads of the group of loads to be powered by the generator when the power grid does not operate at the acceptable voltage;”	Claim 13
“a processor circuit being programmed to control the transfer switch and the DC to AC inverter to power one or more loads of the group of loads including the battery charger from the power grid when the power grid operates at an acceptable voltage to cause the one or more loads of the group of loads but not the battery charger to be powered by the DC to AC inverter when the power grid does not operate at the acceptable voltage;”	Claim 37

(b) '618 Patent

Patent Term/Phrase	Relevant Claim(s)
“the A.C. electric power having a standard frequency and voltage”	Claim 1
“a load coupler device operating to disconnect one or more loads to prevent or relieve an overload of the power source”	Claim 1
“having an input coupled at the line connection to the electric power and an output providing lower voltage power to power a processor circuit”	Claim 1
“the user input circuit to receive inputs from an installer”	Claim 1
“allowing configuration of the load coupler device by the installer”	Claim 1
“whereby via the connection or sensor coupled to the line connection the processor is responsive to the amount of total load on the power source”	Claim 1
“either relieve an actual overload or prevent a potential overload of the power source, or both”	Claim 1
“following the load shed after at least a known time period the processor closes the contactor to resupply power to the first load, the known time period responsive to the configuration of the load coupler”	Claim 1
“the electric power is 240 volts A.C. and the contactor, power supply,	Claim 4

Patent Term/Phrase	Relevant Claim(s)
processor and user input circuit are all contained within a UL approved enclosure.”	
“a name or other identifier can be assigned thereto via the user input circuit”	Claim 5
“the priority of the first load can be assigned to the load coupler via the user input circuit”	Claims 6, 20
“the processor circuit determines when to cause a load shed in response to a known and greater than an unavoidable electronic circuit propagation delay time duration of an overload.”	Claim 7
“the processor circuit determines when to cause a load shed in response to the amount of an overload and the time duration of the overload”	Claim 8
“the processor circuit responds directly to power provided at the contactor line connection and causes a load shed in response to the duration and voltage of a lower than normal voltage of the power”	Claim 9
“the processor circuit causes a load shed in response to the amount of current the load draws from the power provided via, and sensed at the contactor line connection”	Claim 10
“the processor circuit causes a load shed in response to a lower than normal frequency, and the duration of lower than normal frequency, of the power provided to and sensed at the contactor line connection”	Claim 11
“the processor circuit causes a load shed in response to the amount of total load on the power source”	Claim 12
“the amount of total load being determined by an electronic circuit which is part of a control system of the power source”	Claim 12
“when the processor circuit causes a load shed and further causes the load shed to end a known amount of time after the load shed wherein the known amount of time is responsive to the configuration which the installer provides”	Claim 13
“the processor circuit is responsive to the frequency of the power provided by the power source”	Claim 14
“the known amount of time is responsive to the priority of the first load which the installer assigns to the load coupler device”	Claim 14
“the processor circuit is responsive to an installer's inputs to the user input circuit”	Claim 15
“the processor first determines at least one of whether the power	Claim 16

Patent Term/Phrase	Relevant Claim(s)
source is already overloaded or if connecting the first load will cause the power source to become overloaded, and if one of these conditions exists, the processor does not close the contactor”	
“receives standard single or multiple phase voltage and frequency A.C. electric power for a group of loads from a primary first power source”	Claim 17
“a second power source providing A.C. electrical power at the same standard voltage and frequency as a first power source connected at a service connection”	Claim 17
“a power supply having an input responsive to the power at the contactor line terminal and an output for providing power to a processor circuit”	Claim 17
“a user input circuit coupled to the processor circuit and enabling a user who is an installer to configure the first load coupler to operate”	Claim 17
“the processor circuit being programmed to cause a load shed in response to at least one of an actual or potential overload of the second power source”	Claim 17
“operating to close the contactor to resupply power to the first load after at least a known time period after the load shed with the known time period being responsive to the first load coupler configuration”	Claim 17
“a name or other identifier can be assigned to the first load coupler via the user input circuit”	Claim 19
“the processor circuit causes a load shed in response to sensing, at the line terminal of the contactor, a drop in the voltage of the power”	Claim 21
“the processor circuit causes a load shed in response to sensing, at the line terminal of the contactor, the current of the power”	Claim 22
“the processor circuit causes a load shed in response to sensing, at the line terminal of the contactor, a drop in the frequency of the power”	Claim 23
“the drop in frequency representing a known amount of power being supplied by the second power source”	Claim 23
“the processor circuit causes a load shed at a known time after the start of an overload the known time responsive to the amount of overload and duration of overload as determined by sensing, at the contactor line terminal, the frequency of the power”	Claim 24
“in response to sensing, at the contactor line terminal, a drop in the frequency of the power provided by the second power source, the	Claim 25

Patent Term/Phrase	Relevant Claim(s)
processor circuit creates a load shed”	
“causing the contactor to close the power circuit to the first load after at least a known amount of time after that overload ends”	Claim 25
“the known amount of time is responsive to the configuration which the installer provides”	Claim 26
“the known amount of time is responsive to the priority which the installer assigns to the load when the load coupler is installed”	Claim 27
“the load coupler is responsive to an installer's input to the user input circuit”	Claim 28
“the power supply is configured to receive the 240 volt A.C. power from the line terminal of the contactor and provide low voltage D.C. power required by the microcontroller”	Claim 29
“before the processor circuit would otherwise close the contactor to resupply power to the first load when the known time period elapses”	Claim 30
“the processor first determines at least one of whether the second power source is overloaded or if connecting the first load will cause the second power source to become overloaded,”	Claim 30
“further waits at least a second time period before again attempting to close the contactor”	Claim 30

(c) '857 Patent

Patent Term/Phrase	Relevant Claim(s)
“which frequency is controlled in response to the timely amount of the output A.C. power;”	Claim 1
“when the power source is overloaded or is near to being overloaded”	Claim 1
“helping to prevent or alleviate an overload of the power source”	Claim 1
“the power source changes the A.C. power output frequency from the first frequency to the second frequency to signal the processor circuit to shed one or more of the plurality of loads to help the power source to recover from an overload.”	Claim 2
“the power system controls the charging of the at least one rechargeable battery from a power grid.”	Claim 6
“the power system controls the charging of the at least one rechargeable battery from a power grid.”	Claim 7

Patent Term/Phrase	Relevant Claim(s)
“the power system controls the charging of the at least one rechargeable battery from at least one solar panel.”	Claim 8
“the power system controls the charging of the at least one rechargeable battery from a non-grid internal combustion powered electrical power source.”	Claim 9
“the power system controls the selection of at least one of the power grid and the at least one solar panel to charge the at least one rechargeable battery.”	Claim 10
“operating in response to the at least one timely operating parameter to control the AC power frequency to have a timely one of a plurality of frequencies including least a first frequency when there is no overload and a second frequency when there is an overload”	Claim 27
“the power system further comprising a coupling circuit for controllably coupling the AC power to at least a first load of the one or more loads, the first coupling being responsive to the loading of the AC power source in a manner that it performs at least one of helping to prevent, or helping to mitigate, overloading of the power source.”	Claim 27
“one or more non-utility type power source comprising at least an AC power generating circuit which outputs sinusoidal single or multiple phase AC power which may be controllably coupled to one or more of a plurality of loads, the AC power having a plurality of parameters including at least a frequency, a voltage, sine wave distortion and a current which may range from zero to a maximum amount depending on the loading of the power source;”	Claim 66
“the load manager circuit responsive to the frequency of the AC power to provide AC power to at least one of the one or more of a plurality of loads when the power source is not overloaded and not provide AC power when the power source is overloaded.	Claim 66
“the load manager circuit is responsive to the AC power frequency and to at least the sine distortion of the AC power to provide or not provide AC power to the at least one of the one or more of a plurality of loads.”	Claim 71

2. Indefiniteness Under 35 U.S.C. § 112 (b)

A claim term can be indefinite based on multiple grounds ranging from the substantive concerns to unresolvable drafting errors, each of which can doom the validity of the claims as a

matter of law. For example, the Federal Circuit has repeatedly held that apparatus claims that contain method claim limitations are indefinite because it is impossible to determine when direct infringement occurs. *See, e.g., Rembrandt Data Techs., L.P. v. AOL, LLC*, 641 F.3d 1331, 1339–40 (Fed. Cir. 2011) (holding an independent claim that recited both an apparatus and a method of using that apparatus was indefinite, as were its dependent claims); *IPXL Holdings v. Amazon.com*, 430 F.3d 1377, 1384 (Fed. Cir. 2005); *In re Katz Interactive Call Processing Patent Litigation*, 639 F.3d 1303, 1318 (Fed. Cir. 2011) (noting that mixed claims “create confusion as to when direct infringement occurs because they are directed both to systems and to actions performed by” users).

Claim terms that lack antecedent basis are indefinite. *See, e.g., Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1348–49 (Fed. Cir. 2002) (holding a claim ending in the middle of a claim limitation was indefinite because it was “impossible to discern the scope of such a truncated limitation”). Furthermore, means plus function claims, which invoke 35 U.S.C. § 112 ¶ 6, may be invalid as indefinite where a patent owner has failed to disclose adequate corresponding structure linked to the recited claim functionality. *See Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1311–12 (Fed. Cir. 2012).

In *Nautilus, Inc. v. Biosig Instruments, Inc.*, the Supreme Court clarified that a patent is invalid “for indefiniteness if its claims read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” 572 U.S. at 898–99. “It cannot be sufficient that a court can ascribe some meaning to a patent’s claim; the definiteness inquiry turns on the understanding of a skilled artisan at the time of the patent application, not that of a court viewing matters *post hoc*.” *Id.* at 911. The Asserted Claims fail the enablement, written description, or definiteness requirements in view of at least the following claim terms and phrases listed below by patent.

The following limitations recited in the Asserted Patents respective Asserted Claims are indefinite in whole, in part or in combination:⁴²

(a) '727 Patent

Patent Term/Phrase	Relevant Claim(s)
“a processor circuit programmed to control the transfer switch and the generator to power the group of loads from the power grid when the power grid operates at an acceptable voltage and to cause one or more loads of the group of loads to be powered by the generator when the power grid does not operate at the acceptable voltage;”	Claim 13
“a processor circuit being programmed to control the transfer switch and the DC to AC inverter to power one or more loads of the group of loads including the battery charger from the power grid when the power grid operates at an acceptable voltage to cause the one or more loads of the group of loads but not the battery charger to be powered by the DC to AC inverter when the power grid does not operate at the acceptable voltage;”	Claim 37

(b) '618 Patent

Patent Term/Phrase	Relevant Claim(s)
“a user input circuit coupled to the processor circuit, the user input circuit to receive inputs from an installer thereby allowing configuration of the load coupler device by the installer when it is installed to operate with the first load”	Claim 1
“the processor circuit coupled to the line and control connections of the contactor and executing a program whereby via the connection or sensor coupled to the line connection the processor is responsive to the amount of total load on the power source and one or more of voltage, current or frequency of the electric power supplied at the contactor line connection to cause a load shed by opening the contactor to either relieve an actual overload or prevent a potential overload of the power source, or both, and following the load shed after at least a known time period the processor closes the contactor to resupply power to the first load, the known time period responsive to the configuration of the load coupler.”	Claim 1

⁴² Listed claims also include all Asserted Claims dependent thereon, even if those claims are not individually listed.

Patent Term/Phrase	Relevant Claim(s)
“the priority of the first load can be assigned to the load coupler via the user input circuit”	Claims 6, 20
“the processor circuit determines when to cause a load shed in response to a known and greater than an unavoidable electronic circuit propagation delay time duration of an overload.”	Claim 7
“the processor circuit determines when to cause a load shed in response to the amount of an overload and the time duration of the overload with the load shed occurring faster for large overloads as compared to small overloads.”	Claim 8
“the processor circuit responds directly to power provided at the contactor line connection and causes a load shed in response to the duration and voltage of a lower than normal voltage of the power provided at the contactor line connection.”	Claim 9
“the processor circuit causes a load shed in response to the amount of current the load draws from the power provided via, and sensed at the contactor line connection, such that a load which does not draw enough current to relieve an overload is not shed.”	Claim 10
“the processor circuit causes a load shed in response to a lower than normal frequency, and the duration of lower than normal frequency, of the power provided to and sensed at the contactor line connection such that for lower than normal frequencies, a lower frequency will cause a load shed faster than a relatively higher frequency.”	Claim 11
“the processor circuit causes a load shed in response to the amount of total load on the power source, the amount of total load being determined by an electronic circuit which is part of a control system of the power source.”	Claim 12
“when the processor circuit causes a load shed and further causes the load shed to end a known amount of time after the load shed wherein the known amount of time is responsive to the configuration which the installer provides when the load coupler device is installed.”	Claim 13
“the processor circuit is responsive to the frequency of the power provided by the power source to cause the contactor to close the power circuit to the first load at a known amount of time after an overload of the power source ends wherein the known amount of time is responsive to the priority of the first load which the installer assigns to the load coupler device when the load coupler device is installed.”	Claim 14
“the processor first determines at least one of whether the power source is already overloaded or if connecting the first load will cause the power source to become overloaded, and if one of these	Claim 16

Patent Term/Phrase	Relevant Claim(s)
conditions exists, the processor does not close the contactor thus preventing the first load from being connected to the power source”	
“a contactor having one or more each of line and load terminals for wiring the contactor in series in the electric circuit from the transfer switch output to the power input of a corresponding first load, the line terminal receiving power from the transfer switch output and the load terminal providing that power to the first load when the contactor is closed,”	Claim 17
“the processor circuit executing steps of a program and being coupled to and controlling the contactor to open and close to thereby control coupling of power from the transfer switch output to the first load, the processor circuit normally causing the contactor to be closed to provide power to the first load,”	Claim 17
“the processor circuit being programmed to cause a load shed in response to at least one of an actual or potential overload of the second power source and further operating to close the contactor to resupply power to the first load after at least a known time period after the load shed with the known time period being responsive to the first load coupler configuration by the installer.”	Claim 17
“the processor circuit causes a load shed in response to sensing, at the line terminal of the contactor, a drop in the voltage of the power provided by the second power source.”	Claim 21
“the processor circuit causes a load shed in response to sensing, at the line terminal of the contactor, the current of the power provided by the second power source and consumed by the first load.”	Claim 22
“the processor circuit causes a load shed in response to sensing, at the line terminal of the contactor, a drop in the frequency of the power provided by the second power source the drop in frequency representing a known amount of power being supplied by the second power source.”	Claim 23
“the processor circuit causes a load shed at a known time after the start of an overload the known time responsive to the amount of overload and duration of overload as determined by sensing, at the contactor line terminal, the frequency of the power provided by the second power source.”	Claim 24
“in response to sensing, at the contactor line terminal, a drop in the frequency of the power provided by the second power source, the processor circuit creates a load shed followed by causing the contactor to close the power circuit to the first load after at least a known amount of time after that overload ends.”	Claim 25

Patent Term/Phrase	Relevant Claim(s)
“the known amount of time is responsive to the configuration which the installer provides when the load coupler is installed.”	Claim 26
“the known amount of time is responsive to the priority which the installer assigns to the load when the load coupler is installed.”	Claim 27
“the processor first determines at least one of whether the second power source is overloaded or if connecting the first load will cause the second power source to become overloaded, and if one of those conditions exists, the processor does not close the contactor to prevent the first load from being connected to the second power source and further waits at least a second time period before again attempting to close the contactor.”	Claim 30

B. Invalidity Under 35 U.S.C. § 101

Defendant incorporates by reference its arguments made in support of its motion to dismiss, asserting that each of the Asserted Patents’ claims fail to claim patent eligible subject matter under 35 U.S.C. § 101. (*See, e.g.*, Dkt. Nos. 9, 17, 19, 21, 23.) For the avoidance of doubt, Defendant incorporates by reference each of the aforementioned docket numbers and all Exhibits attached to those docket numbers. (*Id.*)

Additional evidence regarding the state of the industry prior to the filing of the Asserted Patents, how each element of each Asserted Claim was well understood, routine, and conventional, and other evidence supporting the ineligibility of the Asserted Claims is contained in the foregoing Sections IV–VI and related Appendices (all of which are incorporated herein by reference), and in Defendant’s productions of prior art, which include numerous references disclosing the alleged invention claimed in the Asserted Patents and the elements thereof. Defendant reserves the right to rely on percipient and/or expert testimony to supplement, summarize, and/or explain the state of the industry prior to the filing of the Asserted Patents, how each element of each Asserted Claim was well understood, routine, and conventional, and other evidence supporting the ineligibility of the Asserted Claims. Any such witnesses will be disclosed pursuant to the Federal Rules of Civil

Procedure and the Court's Scheduling Order in this case for initial, additional, and expert disclosures.

VIII. ACCOMPANYING DOCUMENT PRODUCTION

In connection with these Invalidity Contentions, Defendant also provides the documents underlying these contentions. *See* GENERAC-PA_0000001-GENERAC-PA_0017379. Defendant produces or makes available for inspection documents and other materials sufficient to show the operation of any aspects or elements of the Accused Products identified by Plaintiff in its infringement charts. In addition, Defendant will make available source code for inspection under the appropriate provisions of a Protective Order after one is entered into this case, with proper notice of Plaintiff's intent to inspect.

Defendant also produces a copy of each item of prior art identified herein. These prior art references and corroborating evidence are cited in attached invalidity claim charts. Defendant will also make available for inspection any prior art systems or devices upon request to the extent Defendant acquires such systems or devices. References that were cited during prosecution of the Asserted Patents may not be contained in Defendant's production—these need not be produced given that they are readily publicly available, and just as easily obtainable by Plaintiff as Defendant. Defendant's search for prior art references, additional documentation, or corroborating evidence concerning prior art systems and devices is ongoing. Accordingly, Defendant reserves the right to supplement its production as Defendant obtains additional prior art references, documentation, or corroborating evidence concerning invalidity during discovery.

Dated: November 21, 2025

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the above and foregoing document has been served on November 21, 2025, via electronic mail, to all counsel of record.

/s/ David B. Conrad

David B. Conrad