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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/388,120	07/29/2021	Brendan Pancheri	04934.0153USC2	4450
23552	7590	10/17/2022		
MERCHANT & GOULD P.C.			EXAMINER	
P.O. BOX 2903			YESHAW, ESAYAS G	
MINNEAPOLIS, MN 55402-0903				
			ART UNIT	PAPER NUMBER
			2836	
			NOTIFICATION DATE	DELIVERY MODE
			10/17/2022	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO23552@merchantgould.com

Office Action Summary

Application No.

17/388,120

Applicant(s)

Pancheri, Brendan

Examiner

ESAYAS G YESHAW

Art Unit

2836

AIA (FITF) Status

Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 9-8-22.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 21-40 is/are pending in the application.

5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 21-40 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 7-29-21 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

3) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date ____.

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)

4) ☐ Other: ____.

Paper No(s)/Mail Date ____.

DETAILED ACTION

1. The office action is in response to original application filed on 9-8-22.

Claims 21-40 are pending in the application and have been examined.

Notice of Pre-AIA or AIA Status

2. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Priority

3. Receipt is acknowledged of certified copies of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

5. Claims 21-40 are rejected under 35 U.S.C. 102 (a) (2) as being anticipated by US 10,879,727 to Cooper (“Cooper”).

6. Regarding claim 21, Cooper discloses (Figs. 16, 18 and paragraphs 0160, 0162-0167) a method of disconnecting a load (16) from a power source (From Genset/Transfer Switch) in a power distribution system, the method comprising: receiving power from a power source (From Genset/Transfer Switch) at an input of a load shed module (load control 88), the power having an alternating current (AC) voltage (par. 0161); determining a frequency of the AC voltage at the input (connection 87) using a controller (frequency measurement 90 & microprocessor 37 in load control circuit 25c) in the load shed module; and disconnecting a load (via current control 44, power turned off, par. 0161) from the power source when the frequency of the AC voltage is outside of a frequency range (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166).

7. Regarding claim 22, Cooper discloses using the controller to determine whether the power source is a utility power source (Power grid 12) or a backup power source as a function of the frequency of the AC voltage.

8. Regarding claim 23, Cooper discloses monitoring the AC voltage and reconnecting the load to the power source when the frequency of the AC voltage is within the frequency range (frequency measurement circuits 90 responsive to the frequency of the incoming power).

9. Regarding claim 24, Cooper discloses the frequency range is a frequency threshold with a low frequency limit, wherein frequencies above the low frequency limit are within the frequency range; and wherein frequencies below the low frequency limit are outside of the frequency range (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166).

10. Regarding claim 25, Cooper discloses determining that the frequency of the AC voltage is outside of the frequency range (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166); and monitoring the frequency of the power source for a time period (Col. 16, lines 57, grid power remains off for 5 seconds); wherein disconnecting the load from the power source (fig. 4) when the frequency of the AC voltage is outside of a frequency range (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166) further comprises disconnecting the load from the power source when the frequency of the AC voltage remains outside of the frequency range after the time period is lapsed (Col. 2, lines 66-67, connection and disconnection of power from the power source to the load is in general controlled by one more switch).

11. Regarding claim 26, Cooper discloses determining the frequency of the AC voltage comprises: generating a feedback (user input and user feedback module 39) signal (control signals 85) corresponding to the AC voltage present at the input using a sensor (sensors 21); and receiving the feedback signal with the controller.

12. Regarding claim 27, Cooper discloses a load shed module configured to be connected between a transfer switch (fig. 4, 15) and a load (16), the load shed module comprising: an input (load control 88) configured to receive an electrical connection from the transfer switch; an output (Load switch) configured to provide an electrical connection for the load; a switch between the input and the output (fig. 4), wherein the switch receives a control signal (control signals 85) that selectively controls the switch; and a controller (frequency measurement 90 & microprocessor 37 in load control circuit 25c) to supply the control signal (control signals 85), wherein the controller is operable to open the switch when the frequency of an alternating current (AC) voltage at the input is below a frequency threshold (Col. 35, lines 44-46, power frequency makes more than normal excursions, if even momentary, below a given frequency threshold).

13. Regarding claim 28, Cooper discloses the frequency threshold is a lower frequency threshold (Col. 35, lines 44-46, power frequency makes more than normal excursions, if even momentary, below a given frequency threshold) and a second frequency threshold is an upper frequency threshold; and wherein the

controller is operable to open the switch when the frequency of the AC voltage is above the second frequency threshold (Col. 35, lines 30-42).

14. Regarding claim 29, Cooper discloses the controller is operable to determine whether the power source is a utility power source (Power grid 12) or a backup power source based on the frequency of the AC voltage.

15. Regarding claim 30, Cooper discloses the controller determines that the power source is a backup power source if the frequency of the AC voltage is outside a frequency range (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166).

16. Regarding claim 31, Cooper discloses the controller is configured to determine the frequency of the AC voltage at the input; and wherein after determining that the frequency of the AC voltage at the input is below the frequency threshold range (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166), the controller monitors the frequency for a time period before opening the switch (power source monitor 49).

17. Regarding claim 32, Cooper discloses the controller is operable to close the switch when the frequency of the AC voltage at the input is above the frequency threshold (Col. 17, lines 66, Col. 18, When grid power is available the generator &

transfer switch controller 14 operates (via) control signal connections shown by arrowed lines).

18. Regarding claim 33, Cooper discloses the controller is operable to: monitor the frequency of the AC voltage at the input after closing the switch; and reopen the switch if the frequency falls below the frequency threshold (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166).

19. Regarding claim 34, Cooper discloses a load shed module configured to be connected between a transfer switch (fig. 4, 15) and a load (16), the, the load shed module comprising: an input (load control 88) configured to receive an alternating current (AC) voltage from the transfer switch; an output (Load switch) configured to provide an electrical connection for the load; and a controller (frequency measurement 90 & microprocessor 37 in load control circuit 25c), wherein the controller is operable to: determine whether the AC voltage is from a utility power source or a backup power source based on a frequency of the AC voltage at the input; and shed the load when the AC voltage is from the backup power source.

20. Regarding claim 35, Cooper discloses the controller is configured to determine that the AC voltage is from the utility power source if the frequency of the AC voltage is within a frequency range (when the genset enters an overload

condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166).

21. Regarding claim 36, Cooper discloses the controller is configured to determine that the AC voltage is from the backup power source if the frequency of the AC voltage is outside of the frequency range (when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range, paragraphs 0161, 0166).

22. Regarding claim 37, Cooper discloses the controller is operable to retain the load when the AC voltage is from the utility power source (Col. 9).

23. Regarding claim 38, Cooper discloses the controller is operable to: monitor the frequency of the AC voltage at the input; and reconnect the load if the frequency of the AC voltage at the input (connection 87) indicates that the backup power source is operating under nominal operating parameters (Col. 10, lines 3-5, capabilities of the power source and the type of load to be connected (including one or more parameter of each), the priority or importance of the load to be connected).

24. Regarding claim 39, Cooper discloses the load shed module further comprises: a sensor (sensors 21) configured to generate a feedback signal (user input and user feedback module 39) corresponding to an AC voltage present at the

input (12); and wherein the determination of whether the AC voltage is from the utility power source or the backup power source is based on the feedback signal.

25. Regarding claim 40, Cooper discloses the load shed module further comprises: a switch between the input and the load (fig. 4); and wherein shedding the load includes opening the switch (Col. 35, lines 30-42).

Examiner Note

26. The examiner cites particular columns/paragraphs and lines numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- DOZIER et al. US 2011/0320053 A1- A control system is provided for use with a plurality of generator sets. The control system may have a transmission network connected to a load and separately connectable to each of the plurality

of generator sets. The control system may also have a selection module configured to receive from a user a selection of available parameters for use as criteria in determining connections of the plurality of generator sets with the transmission network, and a controller in communication with the plurality of generator sets and the selection module.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ESAYAS G YESHAW whose telephone number is (571)270-1959. The examiner can normally be reached Mon-Sat 9AM-7PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 5712722391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent

submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JARED FUREMAN/
Supervisory Patent Examiner,
Art Unit 2836

/ESAYAS G YESHAW/
Examiner, Art Unit 2836



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/388,120	07/29/2021	Brendan Pancheri	04934.0153USC2	4450
23552	7590	04/17/2023		
MERCHANT & GOULD P.C.			EXAMINER	
P.O. BOX 2903			YESHAW, ESAYAS G	
MINNEAPOLIS, MN 55402-0903				
			ART UNIT	PAPER NUMBER
			2836	
			NOTIFICATION DATE	DELIVERY MODE
			04/17/2023	ELECTRONIC

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USPTO23552@merchantgould.com

Office Action Summary

Application No.

17/388,120

Applicant(s)

Pancheri et al.

Examiner

ESAYAS G YESHAW

Art Unit

2836

AIA (FITF) Status

Yes

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Period for Reply

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- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 1-17-23.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☒ This action is **FINAL**.

2b) ☐ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 21-40 is/are pending in the application.

5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 21-40 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 7-29-21 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

3) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date ____.

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)

4) ☐ Other: ____.

Paper No(s)/Mail Date 1-11-22.

DETAILED ACTION

1. The office action is in response to application filed on 1-17-23. Claims 21-40 are pending in the application and have been examined.

Notice of Pre-AIA or AIA Status

2. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

4. Claims 21-40 are rejected under 35 U.S.C. 102 (a) (2) as being anticipated by US 10,879,727 to Cooper (“Cooper”).

5. Regarding claim 21, Cooper discloses (Figs. 16, 18 and Col. 54, lines 8-24) a method of disconnecting a load (16) from a power source (From Genset/Transfer Switch) in a power distribution system, the method comprising: receiving power from a power source (From Genset/Transfer Switch) at an input of a load shed

module (load control 88), the power having an alternating current (AC) voltage (par. 0161); determining a frequency of the AC voltage at the input (connection 87) using a controller (frequency measurement 90 & microprocessor 37 in load control circuit 25c, see fig. 18); and disconnecting a load (via current control 44, power turned off, Col. 54, lines 8-24) from the power source using a switch (current control circuit 44) when the frequency of the AC voltage is outside of a frequency range (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range); the controller and the switch being housed within a housing of the load shed module (fig. 16, both 25c and 44 are within their enclosures and installed inside 88, see also col. 55, lines 45-60).

6. Regarding claim 22, Cooper discloses using the controller to determine whether the power source is a utility power source (Power grid 12) or a backup power source (Generator 13, fig. 16, col. 20, lines 29-35) as a function of the frequency of the AC voltage.

7. Regarding claim 23, Cooper discloses monitoring the AC voltage and reconnecting the load to the power source when the frequency of the AC voltage is within the frequency range (frequency measurement circuits 90 responsive to the frequency of the incoming power).

8. Regarding claim 24, Cooper discloses the frequency range is a frequency threshold with a low frequency limit, wherein frequencies above the low frequency limit are within the frequency range; and wherein frequencies below the low frequency limit are outside of the frequency range (Col. 54, lines 8-24).

9. Regarding claim 25, Cooper discloses determining that the frequency of the AC voltage is outside of the frequency range (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range); and monitoring the frequency of the power source for a time period (Col. 16, lines 57, grid power remains off for 5 seconds); wherein disconnecting the load from the power source (fig. 4) when the frequency of the AC voltage is outside of a frequency range (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range) further comprises disconnecting the load from the power source when the frequency of the AC voltage remains outside of the frequency range after the time period is lapsed (Col. 2, lines 66-67, connection and disconnection of power from the power source to the load is in general controlled by one more switch).

10. Regarding claim 26, Cooper discloses determining the frequency of the AC voltage comprises: generating a feedback (user input and user feedback module 39) signal (control signals 85) corresponding to the AC voltage present at the input using a sensor (sensors 21); and receiving the feedback signal with the controller.

11. Regarding claim 27, Cooper discloses a load shed module configured to be connected between a transfer switch (fig. 4, 15) and a load (16), the load shed module comprising: an input (load control 88) configured to receive an electrical connection from the transfer switch; an output (Load switch) configured to provide an electrical connection for the load; a switch (current control circuit 44) between the input and the output (fig. 4), wherein the switch receives a control signal (control signals 85) that selectively controls the switch; a controller (frequency measurement 90 & microprocessor 37 in load control circuit 25c) to supply the control signal (control signals 85), wherein the controller is operable to open the switch when the frequency of an alternating current (AC) voltage at the input is below a frequency threshold (Col. 35, lines 44-46, power frequency makes more than normal excursions, if even momentary, below a given frequency threshold); and a housing within which the switch and the controller are housed (fig. 16, both 25c and 44 are within their enclosures and installed inside 88, see also col. 55, lines 45-60).

12. Regarding claim 28, Cooper discloses the frequency threshold is a lower frequency threshold (Col. 35, lines 44-46, power frequency makes more than normal excursions, if even momentary, below a given frequency threshold) and a second frequency threshold is an upper frequency threshold; and wherein the controller is operable to open the switch when the frequency of the AC voltage is above the second frequency threshold (Col. 35, lines 30-42).

13. Regarding claim 29, Cooper discloses the controller is operable to determine whether the power source is a utility power source (Power grid 12) or a backup power source based on the frequency of the AC voltage.

14. Regarding claim 30, Cooper discloses the controller determines that the power source is a backup power source if the frequency of the AC voltage is outside a frequency range (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range).

15. Regarding claim 31, Cooper discloses the controller is configured to determine the frequency of the AC voltage at the input; and wherein after determining that the frequency of the AC voltage at the input is below the frequency threshold range (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or

otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range), the controller monitors the frequency for a time period before opening the switch (power source monitor 49).

16. Regarding claim 32, Cooper discloses the controller is operable to close the switch when the frequency of the AC voltage at the input is above the frequency threshold (Col. 17, lines 66, Col. 18, When grid power is available the generator & transfer switch controller 14 operates (via) control signal connections shown by arrowed lines).

17. Regarding claim 33, Cooper discloses the controller is operable to: monitor the frequency of the AC voltage at the input after closing the switch; and reopen the switch if the frequency falls below the frequency threshold (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range).

18. Regarding claim 34, Cooper discloses a load shed module configured to be connected between a transfer switch (fig. 4, 15) and a load (16), the, the load shed module comprising: an input (load control 88) configured to receive an alternating current (AC) voltage from the transfer switch; an output (Load switch) configured

to provide an electrical connection for the load; a controller (frequency measurement 90 & microprocessor 37 in load control circuit 25c), wherein the controller is operable to: determine whether the AC voltage is from a utility power (utility power grid 12) source or a backup power source (Generator 13, fig. 16) based on a frequency of the AC voltage at the input (sensing the frequency of the AC power produced by the generator by 25c); and open a switch to shed the load (Col. 26, lines 58-66 and Col. 57, lines 41-43 and when the frequency detector set to detect degrees or levels of frequency change, with some loads being disconnected in order to shed the loads) when the AC voltage is from the backup power source (Col. 54, lines 9-12, which is coupled to power from the genset which is supplied via a transfer switch and controlling the power supplied to a load 16 with a current control 44); and a housing within which the switch and the controller are housed (fig. 16, both 25c and 44 are within their enclosures and installed inside 88, see also col. 55, lines 45-60)

19. Regarding claim 35, Cooper discloses the controller is configured to determine that the AC voltage is from the utility power source if the frequency of the AC voltage is within a frequency range (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range).

20. Regarding claim 36, Cooper discloses the controller is configured to determine that the AC voltage is from the backup power source if the frequency of the AC voltage is outside of the frequency range (Col. 54, lines 19-21, load control circuit 25c will operate to sense the power frequency (and/or voltage or other parameter) via 87 or otherwise and when the genset enters an overload condition, the frequency of the AC voltage will be outside of a normal frequency range).

21. Regarding claim 37, Cooper discloses the controller is operable to retain the load when the AC voltage is from the utility power source (Col. 9).

22. Regarding claim 38, Cooper discloses the controller is operable to: monitor the frequency of the AC voltage at the input; and reconnect the load if the frequency of the AC voltage at the input (connection 87) indicates that the backup power source is operating under nominal operating parameters (Col. 10, lines 3-5, capabilities of the power source and the type of load to be connected (including one or more parameter of each), the priority or importance of the load to be connected).

23. Regarding claim 39, Cooper discloses the load shed module further comprises: a sensor (sensors 21) configured to generate a feedback signal (user input and user feedback module 39) corresponding to an AC voltage present at the input (12); and wherein the determination of whether the AC voltage is from the utility power source or the backup power source is based on the feedback signal.

24. Regarding claim 40, Cooper discloses the switch is between the input and the load (fig. 16).

Response to Arguments

25. Applicant's argument filed on 1-17-23 with respect to claims 21-40 has been fully considered, but the applicants' arguments are not persuasive, as they are directed to the wrong Cooper embodiment. The Applicants' citations to figure 4 do not show any error in the art rejections citing figures 16 and 18. Figure 4 is a separate embodiment than figures 16/18, as it shows a centralized controller (25a). Figures 16/18 clearly show a load shed module ("load coupler" 80, 88) with additional components than the load switches of figure 4. The load couplers include a local controller and switch that are housed within the coupler/module housing. The figure 16/18 local controller also disconnects a load when a frequency is out of range (col. 54, lines 8-24) without the use of a centralized controller.

Further, it should be noted that Cooper clearly teaches that the controller and the switch being housed within a housing of the load shed module (fig. 16, col. 55, lines 45-60)

The Applicants' citations to figure 4 do not rebut the art rejection citing figures 16 and 18. The art rejection is maintained. Finally, the box around the coupler (80, 88)

is a housing which can protect the electrical devices from short circuit and contamination.

Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ESAYAS G YESHAW whose telephone number is (571)270-1959. The examiner can normally be reached Mon-Sat 9AM-7PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule

an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 5712722391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/ESAYAS G YESHAW/
Examiner, Art Unit 2836

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Application No. 17/388,120

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Brendan Pancheri	Examiner:	Esayas G. Yeshaw
Application No.:	17/388,120	Group Art Unit:	2836
Filed:	July 29, 2021	Docket No.:	04934.0153USC2
Customer No.:	23552	Confirmation No.:	4450
Title:	LOAD SHED SYSTEM		

AMENDMENT AND RESPONSE

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Attn: Commissioner for Patents:

In response to the final Office Action mailed April 17, 2023, please consider and enter the following amendments and remarks.

Amendments to the Claims are reflected in the **Listing of Claims** that are included in this paper.

Remarks are included in this paper.

Amendment to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-20. (Canceled)

21. (Currently Amended) A method of disconnecting a load from a power source in a power distribution system, the method comprising:

receiving power from a power source at an input of a load shed module, the power having an alternating current (AC) voltage;

determining a frequency of the AC voltage at the input using a controller; [[and]]

determining a stiffness of the AC voltage at the input using the controller;

disconnecting a load from the power source using a switch when the frequency of the AC voltage is outside of a frequency range and the stiffness of the AC voltage is below a threshold;
and

the controller and the switch being housed within a housing of the load shed module.

22. (Previously Presented) The method of claim 21, wherein the method further comprises:

using the controller to determine whether the power source is a utility power source or a backup power source as a function of the frequency of the AC voltage.

23. (Previously Presented) The method of claim 21, wherein the method further comprises:

monitoring the AC voltage and reconnecting the load to the power source when the frequency of the AC voltage is within the frequency range.

24. (Previously Presented) The method of claim 21, wherein:

the frequency range is a frequency threshold with a low frequency limit,

wherein frequencies above the low frequency limit are within the frequency range; and

wherein frequencies below the low frequency limit are outside of the frequency range.

25. (Previously Presented) The method of claim 21, wherein the method further comprises:

- determining that the frequency of the AC voltage is outside of the frequency range; and
- monitoring the frequency of the power source for a time period;

- wherein disconnecting the load from the power source when the frequency of the AC voltage is outside of a frequency range further comprises disconnecting the load from the power source when the frequency of the AC voltage remains outside of the frequency range after the time period is lapsed.

26. (Previously Presented) The method of claim 21, wherein determining the frequency of the AC voltage comprises:

- generating a feedback signal corresponding to the AC voltage present at the input using a sensor; and

- receiving the feedback signal with the controller.

27. (Currently Amended) A load shed module configured to be connected between a transfer switch and a load, the load shed module comprising:

- an input configured to receive an electrical connection from the transfer switch;

- an output configured to provide an electrical connection for the load;

- a switch between the input and the output, wherein the switch receives a control signal that selectively controls the switch;

- a controller to supply the control signal, wherein the controller is operable to open the switch when:

- the frequency of an alternating current (AC) voltage at the input is below a frequency threshold; and

- the stiffness of an AC voltage at the input is below a stiffness threshold; and

- a housing within which the switch and the controller are housed.

28. (Previously Presented) The load shed module of claim 27, wherein:

the frequency threshold is a lower frequency threshold and a second frequency threshold is an upper frequency threshold; and

wherein the controller is operable to open the switch when the frequency of the AC voltage is above the second frequency threshold.

29. (Currently Amended) The load shed module of claim 27, wherein:

the controller is operable to determine whether ~~[[the]]~~ a power source connected to the transfer switch is a utility power source or a backup power source based on the ~~frequency~~ stiffness of the AC voltage.

30. (Currently Amended) The load shed module of claim 29, wherein the controller determines that the power source is a backup power source if the ~~frequency~~ stiffness of the AC voltage is ~~outside a frequency range~~ below the stiffness threshold.

31. (Previously Presented) The load shed module of claim 27, wherein:

the controller is configured to determine the frequency of the AC voltage at the input; and

wherein after determining that the frequency of the AC voltage at the input is below the frequency threshold, the controller monitors the frequency for a time period before opening the switch.

32. (Previously Presented) The load shed module of claim 27, wherein the controller is operable to close the switch when the frequency of the AC voltage at the input is above the frequency threshold.

33. (Previously Presented) The load shed module of claim 32, wherein the controller is operable to:

monitor the frequency of the AC voltage at the input after closing the switch; and
reopen the switch if the frequency falls below the frequency threshold.

34. (Currently Amended) A load shed module configured to be connected between a transfer switch and a load, the load shed module comprising:

- an input configured to receive an alternating current (AC) voltage from the transfer switch;

- an output configured to provide an electrical connection for the load;

- a controller, wherein the controller is operable to:

 - determine whether the AC voltage is from a utility power source or a backup power source based on ~~a frequency of~~ the stiffness of the AC voltage at the input; and

 - open a switch to shed the load when the AC voltage is from the backup power source; and

- a housing within which the switch and the controller are housed.

35. (Currently Amended) The load shed module of claim 34, wherein the controller is configured to determine that the AC voltage is from the utility power source if the ~~frequency~~ stiffness of the AC voltage is ~~within a frequency range~~ above a stiffness threshold.

36. (Currently Amended) The load shed module of claim 35, wherein the controller is configured to determine that the AC voltage is from the backup power source if the ~~frequency~~ stiffness of the AC voltage is ~~outside of the frequency range~~ below the stiffness threshold.

37. (Previously Presented) The load shed module of claim 34, wherein the controller is operable to retain the load when the AC voltage is from the utility power source.

38. (Previously Presented) The load shed module of claim 34, wherein the controller is operable to:

- monitor the frequency of the AC voltage at the input; and

- reconnect the load if the frequency of the AC voltage at the input indicates that the backup power source is operating under nominal operating parameters.

39. (Currently Amended) The load shed module of claim 34, wherein the load shed module further comprises:

a sensor configured to generate a feedback signal corresponding to an AC voltage present at the input; ~~and~~

~~wherein the determination of whether the AC voltage is from the utility power source or the backup power source is based on the feedback signal.~~

40. (Previously Presented) The load shed module of claim 34, wherein the switch is between the input and the load.

41. (New) The load shed module of claim 21, wherein determining the stiffness of the AC voltage at the input includes determining a difference between a maximum frequency and a minimum frequency of the AC voltage over a period of time.

42. (New) The load shed module of claim 27, wherein the stiffness is based on a difference between a maximum frequency and a minimum frequency of the AC voltage over a period of time.

43. (New) The load shed module of claim 34, wherein the stiffness is based on a difference between a maximum frequency and a minimum frequency of the AC voltage over a period of time.