UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form SD

SPECIALIZED DISCLOSURE REPORT

Vicor Corporation
(Exact Name of Registrant as Specified in Charter)

Delaware	0-18277	04-2742817
(State or Other Jurisdiction of Incorporation)	(Commission File No.)	(I.R.S. Employer Identification Number)

25 Frontage Road, Andover, Massachusetts	01810
(Address of Principal Executive Offices)	(Zip Code)

James A. Simms,
Vice President, Chief Financial Officer
(978) 470-2900
(Name and telephone number, including area code, of the person to contact in connection with this report.)

Check the appropriate box to indicate the rule pursuant to which this form is being filed, and provide the period to which the information in this form applies:

☒ Rule 13p-1 under the Securities Exchange Act (17 CFR 240.13p-1) for the reporting period from January 1 to December 31, 2019.

Section 1 – Conflict Minerals Disclosure

Items 1.01 Conflict Minerals Disclosure and Report

Vicor Corporation evaluated its current product lines and determined that certain products we manufacture or contract to manufacture contain tin, tungsten, tantalum and/or gold (“3TG”). Based on surveys of our suppliers and other inquiry, we determined that some of the 3TG in these products may have originated from the Democratic Republic of the Congo or an adjoining country. As a result, we have prepared and filed a Conflict Minerals Report. A copy of the Company’s Conflict Minerals Report is provided as Exhibit 1.01 hereto and is publicly available at: www.vicorpower.com under “Quality Center”.

Item 1.02 Exhibit

The Company’s Conflict Minerals Report required by Item 1.01 is filed as Exhibit 1.01 to this Form SD.

Section 2 – Exhibits

Item 2.01 Exhibit

Exhibit 1.01 – Conflict Minerals Report as required by Items 1.01 and 1.02 of this Form.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the duly authorized undersigned.

VICOR CORPORATION

By:	/s/ James A. Simms	May 27, 2020
	James A. Simms	(Date)
	Vice President, Chief Financial Officer	

Vicor Corporation
Conflict Minerals Report
for the Year Ended December 31, 2019

This Conflict Minerals Report ("CMR") for the year ended December 31, 2019 is presented to comply with Rule 13p-1 (the "Rule") under the Securities Exchange Act of 1934 (the "Exchange Act"). The Securities and Exchange Commission ("SEC") adopted the Rule to implement reporting and disclosure requirements related to conflict minerals as directed by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act"). The Rule imposes certain reporting obligations on SEC registrants whose manufactured products contain so-called conflict minerals that are necessary to the functionality or production of their products. "Conflict minerals" are defined as (A) cassiterite, columbite-tantalite, gold, wolframite, and their derivatives, which are limited to tin, tantalum, tungsten, and gold ("3TG"); or B) any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the Democratic Republic of Congo ("DRC") or any adjoining country that shares an internationally recognized border with the DRC (the "Covered Countries"). The adjoining countries include: the Republic of the Congo, the Central African Republic, South Sudan, Rwanda, Uganda, Zambia, Burundi, Tanzania and Angola. These requirements apply to registrants whatever the geographic origin of the conflict minerals and whether or not the conflict minerals fund armed conflict in the DRC or other Covered Countries.

1. Introduction

1.1 Company Overview

This report has been prepared by management of Vicor Corporation (herein referred to as "Vicor, "the Company," "we," "us," or "our"). The information in this report covers the activities of Vicor and all of its consolidated subsidiaries.

We design, develop, manufactures, and markets modular power components and power systems for converting electrical power (expressed as "watts," and represented by the symbol "W", with wattage being the product of voltage, expressed as "volts," and represented by the symbol "V ," and current, expressed as "amperes," and represented by the symbol "I"). In electrically-powered devices utilizing alternating current ("AC") voltage from a primary AC source (for example, a wall outlet), a power system converts AC voltage into the stable direct current ("DC") voltage necessary to power subsystems and/or individual applications and devices (known as "loads"). In many electronic devices, this DC voltage may be further converted to one or more voltages and currents required by a range of loads. In equipment utilizing DC voltage from a primary DC source (for example, a battery) or a secondary source (such as an AC-DC converter), the initial DC voltage similarly may require further conversion. A power system most commonly incorporates four voltage conversion functions: transformation, isolation, rectification, and regulation. Transformation refers to the process of increasing or decreasing an AC voltage; isolation refers to the electrical separation, for safety, of primary and secondary voltages in a transformer; rectification refers to the process of converting a voltage from AC to DC and/or from DC to AC; and regulation refers to the process of providing a near constant voltage under a range of line and load conditions. Because numerous applications requiring different voltages, currents, and varied power ratings may exist within an electronically-powered device, and system power architectures themselves vary, we offer an extensive range of products and accessories in numerous application-specific configurations. We believe our product offering is among the most comprehensive in the market segments we serve.

1.2 Products Overview

Reflecting our Power Component Design Methodology, we offer a comprehensive range of modular building blocks enabling design of a power system specific to a customer's precise needs. Based on design, performance, and form factor considerations, as well as the range of evolving applications for which the products are appropriate, we categorize our product portfolios as either Advanced Products or Brick Products. We also sell a range of electrical and mechanical accessories for use with our products.

Advanced Products

We continue to invest in the research and development of power system technologies and product concepts addressing two accelerating trends, the first toward higher required conversion efficiencies, and the second toward more and diverse on-board voltages, higher performance demands of complex loads, and, in particular, higher current requirements of those loads. These trends are most visible in the microprocessor-based applications we target with Advanced Products, for which energy consumption, energy efficiency, processor performance, and computing density are critical priorities. Recognizing the performance and scale limitations of conventional power distribution architectures and products, we introduced FPA and a range of enabling products incorporating our latest advances in power distribution concepts, switching topologies, materials, and packaging.

FPA, which is focused on, but not limited to, 48V DC distribution solutions, increases power system conversion efficiency, density, and power delivery performance by "factorizing" (i.e., separating) the power conversion process into individual components, reducing the design limitations, thermal management challenges, and scaling trade-offs associated with conventional architectures for DC voltage distribution. All such architectures follow a sequence whereby a DC voltage is first transformed, or reduced, and that lower voltage subsequently conducted (i.e., "bussed") across the circuit to the load (i.e., the point of use), where the voltage is regulated and lowered once more, to the required operating voltage of the load. In a FPA implementation, the sequence is reversed. Regulation occurs first, and the regulation module can be placed in the optimal position for space utilization and thermal management. A regulated voltage approaching 48V is bussed across the circuit to the transformation module, which performs what we refer to as current multiplication, adjacent to the load. Bussing high voltage minimizes the current levels across the circuit, thereby minimizing the potential for distribution losses and reducing the volume of the conduit (e.g., the copper wire). Placing the relatively low noise, low heat transformation module adjacent to the load further minimizes the potential for distribution losses associated with bussing a low operating voltage to the load and reduces the potential influence of the power system on the performance of the load.

A typical FPA implementation for delivering 48V DC from a server backplane to a 1.0V microprocessor would consist of three modules: a PRM™ (Pre-Regulator Module) regulator, a VTM™ (Voltage Transformation Module) current multiplier, and a proprietary communications controller. In contrast, a commodity IBA design for delivering 48V DC from a server backplane to a 1.0V microprocessor requires an additional conversion stage, to reduce 48V to 12V, and a multiphase voltage regulation module (i.e., a "VRM" consisting of multiple switching regulators, each representing a phase and consisting of two switching transistors, a capacitor, and an inductor, with the transistors switched by separate pulse width modulation controller). For a 200W two stage, multiphase application, a 12V commodity IBA implementation would require an intermediate bus converter, to reduce 48V to 12V, and a VRM consisting of 10 phases and a controller to reduce and regulate the 12V current for use at 1V by the microprocessor. Such a commodity IBA design requires a significantly higher component count, consumes more motherboard area, requires more copper conduit, generates more heat due to switching and distribution losses, and can be meaningfully less efficient than a 48V FPA implementation. As microprocessor operating voltages have declined and operating currents increased, commodity IBA implementations, given the fundamental constraints of the architecture, have not met the power system conversion efficiency, density, and power delivery performance delivered by FPA.

The advantages of FPA over legacy power distribution architectures are most evident in high performance computing applications. Our "Power-on-Package" power system solution meets the computational performance requirements of artificial intelligence ("AI"). The microprocessors typically used in AI, particularly in more computationally demanding "machine learning" or "training" applications, are graphics processing units ("GPUs") and custom application-specific integrated circuits ("ASICs"). Both GPUs and ASICs, in contrast to CPUs, are designed for parallel processing throughput, not serial execution of complex instruction sets. As such, higher levels of average and peak current are required to achieve this throughput. Our most popular Power-on-Package solution, a re-integration of the functions of our PRM-VTM configuration, consists of one MCD© ("Modular Current Driver") unit, providing high-bandwidth, low-noise regulation, and two MCM© ("Modular Current Multiplier") units, providing high performance current multiplication. Power-on-Package delivers unprecedented current levels to GPUs and ASICs, in part due to the placement of the MCMs directly on the substrate onto which the processor is mounted, thereby minimizing distribution losses associated with high current levels. Placement of MCM units on the substrate also reduces the number of GPU or ASIC processor substrate pins required for power, allowing for their use by other functions (e.g., memory I/O). A typical four-module laterally-mounted Power-on-Package configuration powering a GPU requiring 350W delivers 0.7V , 500A average current, and up to 1,000A peak current, with superior transient response and unmatched power density.

In 2019, we introduced vertically-mounted versions of our Power-on-Package solution, which, by being mounted directly to the underside of the GPU or ASIC, achieves a further 10 times reduction in distribution losses at the load over our laterally-mounted solution. Vertically-mounting the solution allows unrestricted access to microprocessor input/output ("I/O") pins on the top side of the motherboard, thereby improving memory access, which is a priority for GPUs and ASICs in AI applications.

Our proprietary technologies enable us to offer a range of Advanced Products, in various package formats across functional families, applicable to other market segments and power distribution architectures other than FPA. Within computing, these market segments include AC to DC voltage conversion and DC voltage distribution in server racks and high voltage conversion across datacenter infrastructure. We also offer Advanced Product power system solutions for aerospace and aviation (e.g., for use in satellites, unmanned aerial vehicles, and various airframes, for which small size, light weight, and design flexibility are advantageous); defense electronics (e.g., for use in airborne, seaborne, or field communications and radar, for which reliability in harsh environments is a priority); industrial automation, instrumentation, and test equipment (e.g., for use in robotics and semiconductor testing, for which high power levels and precision performance are required); solid state lighting (e.g., for use in large scale displays and signage, for which, again, small size, light weight, and design flexibility are advantageous); telecommunications and networking infrastructure (e.g., for use in high throughput data distribution and pole-mounted small-cell base stations); and vehicles (e.g., in autonomous driving applications, electric vehicles, and hybrid electric vehicles).

Brick Products

Brick-format converters provide the integrated transformation, rectification, isolation, regulation, filtering, and/or input protection necessary to power and protect loads, across a range of conventional power architectures. We offer a wide range of brick-format DC-DC converters, as well as complementary components providing AC line rectification, input filtering, power factor correction, and transient protection. Wide ranges of input voltages, output voltages, and output power are offered, allowing end users to select components appropriate to their individual applications. The products differ in dimensions, temperature grades, maximum power ratings, performance characteristics, pin configuration, and, in certain cases, characteristics specific to the targeted market.

We also integrate these converters and components into complete power systems representing standard or custom AC-DC and DC-DC solutions for our customers' power needs. We refer to such standard products as our "Configurable" product line, while our two Vicor Custom Power subsidiaries design, sell, and service custom power system solutions.

We market our standard Brick Products emphasizing "mass customization," using highly automated, efficient, domestic manufacturing to serve customers with product design and performance requirements, across a wide range of worldwide market segments, which could not be met by high volume oriented competitors. We focus on distributed power implementations, for which our brick-format products are well-suited, in market segments such as aerospace and defense electronics, industrial automation, industrial equipment, instrumentation and test equipment, and transportation (e.g., rail). Our customers range from independent manufacturers of highly specialized electronic devices to larger original equipment manufacturers ("OEMs") and their contract manufacturers. Some of our Brick Product lines have been in production for over a decade, reflecting the long-established relationships we have with many customers and the long-standing suitability of our products to demanding applications.

1.3 Supply Chain

Our supply chain includes close to 1,000 different suppliers. Because of our size, the complexity of our products, and the depth, breadth, and constant evolution of our supply chain, it is difficult to identify actors upstream from our direct suppliers. There are many tiers of suppliers and sub-suppliers between us and a smelter that processes 3TG that is contained in a particular product. Therefore, it is inherently difficult to ascertain the ultimate source of 3TG in the products we manufacture.

As a result, we are relying on our direct suppliers to provide information on the origin of the 3TG contained in components and materials supplied to us – including sources of 3TG that are supplied to them from lower tier suppliers. Since 2013, we have revised contract terms applicable to many of our suppliers with regard to 3TG. Those terms require suppliers to issue certificates certifying compliance with Section 1502 of the Dodd-Frank Act, as may be applicable to the materials and/or services being provided. Our primary means of determining country of origin of necessary 3TG was by conducting a supply chain survey with direct suppliers using the Responsible Minerals Initiative Conflict Minerals Reporting Template (“CMRT”), version 5.11 or higher. This supply chain survey, and the conflict minerals program as a whole, has been developed and implemented in cooperation with our third-party service provider, Claigan Environmental Inc. (“Claigan”). All of our direct suppliers were surveyed as we could not definitively determine which supplier sourced material contained 3TG that were necessary to the functionality or production of our products.

1.4 Conflict Minerals Policy

We have adopted the following conflict minerals policy:

Vicor Corporation’s goal is to maintain the highest standards of integrity and ethical behavior in the conduct of our business. We also seek to comply fully with laws and regulations affecting the conduct of our business.

Provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act require us to make reasonable efforts to determine and document the origin of certain metals used in our products. The intent of the provisions is to inhibit and restrict the demand for “Conflict Minerals” (i.e., gold, tantalum, tin, and tungsten, as well as their ores) sourced from the Democratic Republic of the Congo, or the adjoining central African countries of Angola, Burundi, Central African Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda and Zambia, thereby reducing financial support for the ongoing humanitarian crisis in the region. Vicor is fully committed to the effort to exclude from its products any Conflict Minerals, the purchase of which might indirectly benefit insurgent, armed groups, and others engaged in the abuse of human rights.

Having confirmed the use of the subject metals in our products, we have established a process by which we are documenting our supply chain and identifying vendors of the subject metals. With these vendors, we will seek to identify the country and mine of origin for the subject metals we use. If we conclude we have used “Conflict Minerals”, we must undertake further evaluation of the origin of the specific metals to determine their specific source (i.e., whether the metals were sourced from a mine, smelter, or refiner not participating in an approved conflict-free certification program).

We are collaborating closely with parties in our supply chain, with the objective of developing and implementing a robust process by which Vicor maintains “DRC Conflict Free” status. We require all parties in our Supplier Base to be DRC Conflict Free, to source only from conflict free areas and to utilize smelters certified DRC Conflict Free under the Responsible Minerals Assurance Process. We also are supporting our customers’ efforts to reach the common goal of a socially and environmentally responsible supply chain.

Our policy is publicly available on our website at www.vicorpower.com under “Quality Center”, and under “Conflict Minerals Report”.

2. Conflict Minerals Compliance Process

2.1 Reasonable Country of Origin Inquiry (“RCOI”)

We designed our RCOI process in accordance with Step 2A and 2B of the OECD Due Diligence Guidance. Our RCOI process involved two stages:

- Stage 1 - Supplier RCOI (Step 2A of the OECD Due Diligence Guidance)
- Stage 2 - Smelter RCOI (Step 2B of the OECD Due Diligence Guidance)

Supplier RCOI

We designed our supplier RCOI process to identify, to the best of our efforts, the smelters in our supply chain in accordance with Step 2A of the OECD Due Diligence Guidance. Our supplier RCOI process for the 2019 reporting period included the following -

- Developing a list of suppliers providing 3TG containing components to us.
- Contacting each supplier and requesting the industry standard Conflict Minerals Reporting Template (“CMRT”) including smelter information.
- Reviewing supplier responses for accuracy and completeness.
- Amalgamating supplier provided smelters into a single unique list of smelters meeting the definition of a smelter under one of three industry recognized audit protocols.
- Reviewing the final smelter list (and compared it to industry peers) to determine if we identified reasonably all of the smelters in their supply chain.

For the 2019 reporting period, our RCOI process was executed by Claigan Environmental Inc. (“Claigan”).

Smelter RCOI

Due to the overlap between smelter RCOI and smelter due diligence, the smelter RCOI process is summarized in the due diligence section of this CMR.

2.2 Supplier Engagement

We rely on our direct suppliers to provide information on the origin of the 3TG contained in components and materials supplied to us – including sources of 3TG that are supplied to them from lower tier suppliers.

In accordance with the Organization for Economic Co-operation and Development (“OECD”) requirement to strengthen engagement with suppliers, we have, in cooperation with Assent Compliance, Inc. (“Assent”) and Claigan, provided education to suppliers over the current and past several years. The focus has been on the Conflict Minerals regulations as well as the expectations of the law through Assent’s (in years prior to 2019) and Claigan’s (in 2019) learning systems. All training is tracked and evaluated through publicly available educational material on Assent’s and Claigan’s websites, respectively, and Supplier Help Centers. Training and assistance was also provided through one-on-one support by Assent’s and Claigan’s supplier teams, respectively. In addition, we have leveraged the existing communications within the Company, specifically through our procurement personnel, to encourage supplier interactions with Assent and Claigan as well for them to understand the need for completion of the surveys. Feedback from this process has allowed us to enhance the training, focus it and adapt it to each user’s needs. It has also allowed for our supplier communications to be more focused and ensure expectations are clear.

2.3 Company Management Systems

We established strong management systems according to Step 1 of the OECD Due Diligence Guidance. Our systems include:

- Step 1A - Adopt, and clearly communicate to suppliers and the public, a company policy for the supply chain of minerals originating from conflict-affected and high-risk areas.
  - Implemented a conflict minerals policy
  - Made policy publicly available at

  http://www.vicorpower.com/quality-center
  - Communicated policy directly to suppliers as part of RCOI process.
- Step 1B - Structure internal management to support supply chain due diligence.
  - Maintained an internal cross functional team to support supply chain due diligence.
  - Appointed a member of the senior staff with the necessary competence, knowledge, and experience to oversee supply chain due diligence.
  - Applied the resources necessary to support the operation and monitoring of these processes including internal resources and external consulting support.
- Step 1C - Establish a system of transparency, information collection and control over the supply chain.
  - Implemented a process to collect required supplier and smelter RCOI and due diligence data. Full details on the supply chain data gathering are included in the RCOI and due diligence sections of this CMR.
  - We will retain all relevant RCOI and due diligence documentation for at least five years, as required by our document retention policy.
- Step 1D - Strengthen company engagement with suppliers
  - Directly engaged suppliers during RCOI process.
  - Reviewed supplier responses as part of RCOI process.
  - Added conflict minerals compliance to new supplier contracts and Vicor’s supplier code of conduct.
  - Implemented a plan to improve the quantity and quality of supplier and smelter responses year over year.
- Step 1E - Establish a company and/or mine level grievance mechanism.
  - Recognized the RMAP’s three audit protocols for gold, tin/tantalum, and tungsten as valid sources of smelter or mine level grievances.
  - We have longstanding grievance mechanisms whereby employees and suppliers can report violations of the Company’s policies, including our conflict minerals policy. This mechanism is described in detail in our Code of Business Conduct and Ethics.

3. Due Diligence

Our Due Diligence Process was designed in accordance with the applicable sections of Steps 2, 3, and 4 of the OECD Due Diligence Guidance.

Smelter RCOI and Due Diligence

Our smelter RCOI and due diligence process were designed to:

- Identify the scope of the risk assessment of the mineral supply chain (OECD Step 2B).
- Assess whether the smelters/refiners have carried out all elements of due diligence for responsible supply chains of minerals from conflict-affected and high-risk areas (OECD Step 2C).
- Where necessary, carry out, including through participation in industry-driven programs, joint spot checks at the mineral smelter/refiner’s own facilities (OECD Step 2D).

Our smelter RCOI and Due Diligence Process included the following:

- For each smelter identified in our supply chain

- We attempted direct engagement with the smelter to determine whether or not the smelter sources from the Covered Countries.
- For smelters that declared directly (e.g. email correspondence, publicly available conflict minerals policy, or information available on their website) or through their relevant industry association that they did not source from the Covered Countries, and were not recognized as conflict free by the RMAP, we reviewed publicly available information to determine if there was any contrary evidence to the smelter's declaration. The sources reviewed included:
  - Public internet search (e.g., Google) of the facility in combination with each of the Covered Countries.
  - Review of specific NGO publications. NGO publications reviewed included:
    - Enough Project
    - Global Witness
    - Southern Africa Resource Watch
    - Radio Okapi
  - The most recent UN Group of Experts report on the DRC.

- For smelters that did not respond to direct engagement, we reviewed publicly available sources to determine if there was any reason to believe that the smelter may have sourced from the Covered Countries during the reporting period.
  - We reviewed the same sources as those used to compare against smelter sourcing declarations.
- For high risk smelters (smelters that are sourcing from or there is reason to believe they may be sourcing from the Covered Countries), we require the smelter be audited and recognized as conflict free by the RMAP.
  - For high risk smelters that have not been audited and recognized as conflict free by the RMAP, we communicate the risk to a designated member of senior management (OECD Step 3A) and conducts risk mitigation on the smelter according to OECD Step 3B.

For the 2019 reporting period, our smelter RCOI and due diligence process was executed by Claigan.

Our suppliers identified 303 smelters in their supply chain. We identified 41 smelters that source, or there is a reason to believe they may source, from the Covered Countries. We determined that 33 of these smelters have been audited and recognized as conflict free by the RMAP. We conducted risk mitigation on the remaining 8 smelters.

4. Risk Mitigation

We conducted risk mitigation on 8 smelters that were not recognized as conformant to the RMAP and were sourcing (or there is a reason to believe they may be sourcing) from the DRC or surrounding countries. Our risk mitigation was designed in accordance with Step 3B of the OECD Guidance and was reported to the Vice President of Quality in accordance with Step 3A of the OECD Guidance.

As part of our risk mitigation process, we performed additional due diligence to determine if there was any reason to believe the smelter directly or indirectly financed or benefited armed groups in the DRC or adjoining countries. We also attempted to verify with internal stakeholders and relevant suppliers whether 3TGs from the smelter in question were actually in our supply chain during the 2019 reporting period. Finally, if necessary and where possible, we engaged directly with the smelter to encourage them to become audited and recognized as conformant to the RMAP.

5. Improvement Plan

We are taking and will continue to take the following steps to improve the due diligence conducted to further mitigate risk that the necessary conflict minerals in our products could directly or indirectly benefit or finance armed groups in the Covered Countries:

a. Including a conflict minerals clause in all new and renewing supplier contracts.

b. Continuing to require our suppliers to obtain current, accurate, and complete information about the smelters in their supply chain.

c. Engaging smelters sourcing from the Covered Countries to be audited and certified to a protocol recognized by the RMAP.

d. Follow up in 2020 on smelters requiring risk mitigation.

e. Increasing supplier response above the 75% achieved for 2019 conflict minerals reporting year.