U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

April 1, 2015

Exemption No. 11278
Regulatory Docket No. FAA–2014–0845

Mr. Mark E. McKinnon
Counsel for Perfect View Aerial Media, LLC
McKenna Long & Aldridge LLP
1676 International Drive, Penthouse
Mclean, VA 22102

Dear Mr. McKinnon:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

The Basis for Our Decision

By letter dated October 14, 2014[1], you petitioned the Federal Aviation Administration (FAA) on behalf of Perfect View Aerial Media, LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct thermal and photographic inspection of power infrastructure.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

Discussion of Public Comments:

A summary of the petition was published in the Federal Register on November 13, 2014, (79 FR 67535). Three comments were received. The Small UAV Coalition (Coalition)

[1] By letter dated January 7, 2015, the petitioner responded to the FAA's request for information.

commented in support of the petition. The Air Line Pilots Association, International (ALPA) and the National Agricultural Aviation Association (NAAA) opposed it.

In support of the petition, the Coalition stated the petitioner has proposed to abide by stronger safety measures than hobby and modeler groups operating similar aircraft. The Coalition stated that it does not believe that heightened safety measures should be required for the petitioner simply because of the commercial nature of its operations. The Coalition urged the FAA to adopt an evaluation framework for UAS operations under Section 333 of Public Law 112–95 that weighs the relative safety issues and risks of UAS by class and operational circumstances, rather than adopting artificial distinctions among unmanned aerial vehicles based on commercial and noncommercial operations. The petitioner's UAS pose considerably less safety risk than larger UAS. The Coalition asserted that because UAS operations like the petitioner's pose minimal risk to safety, they should be subject to minimal and appropriate regulations.

The Coalition noted the FAA is to consider the seven factors[2] in Section 333 as a minimum. The Coalition stated the petition shows the FAA should consider factors other than those specified in Section 333, such as location and altitude of its UAS operations. The Coalition maintained that the petitioner's proposed operations satisfy the seven factors in Section 333 and include several additional mitigating factors to ensure the safety and security of the proposed UAS operations. The Coalition emphasized the FAA must evaluate each factor within the context of the petitioner's proposed UAS operations.

The Coalition also commented that the FAA should grant relief from the requirement to hold an airman's certificate. The Coalition further stated that if an airman certificate is required then, that at a minimum, the FAA should provide an exception from the training and testing requirements in part 61 in favor if requirements pertinent to the aircraft and operation proposed. The Coalition also asserted that in section 333 Congress intended for the FAA to consider national security with respect to the operation as opposed to addressing it through pilot certification.

The FAA notes that, as discussed in the grant of exemption to Trimble Navigation Ltd. (Exemption No. 11110), neither section 333, nor the FAA's exemption authority[3] allows the FAA to exempt pilots from the statutory requirement to hold an airman certificate as prescribed in 49 USC § 44711.

The Coalition commented that a visual observer (VO) should not be required for all small UAS operations. The Coalition further asserted that the presence of one or more VOs may

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[2] Section 333(b) of P.L. 112 95 states, in part: "In making the determination under subsection (a), the Secretary shall determine, at a minimum-- (1) which types of unmanned aircraft systems, if any, as a result of their size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do not create a hazard to users of the national airspace system or the public or pose a threat to national security; …"

[3] 49 USC § 44701(f)

allow the UAS to be operated beyond visual line of sight (VLOS) of the pilot in command (PIC) and that the petitioner's proposal to operate the unmanned aircraft (UA) within VLOS of the PIC *and/or* VO should be permitted.

The FAA notes that one of the determinations for operations under section 333 is operation within visual line of sight. The PIC must maintain VLOS while operating the UA. The FAA finds that a VO complements the PIC's capability to see and avoid other aircraft, including when the PIC may be momentarily attending to other flying tasks. The VO provides an additional level of operational safety.

ALPA expressed concern regarding several aspects of the petition. ALPA noted the petitioner did not detail procedures for controlling the airspace or area of operation. Specifically, ALPA stated "there must be means both to ensure that the sUAS remains within the defined airspace and to ensure that the hazard of other aircraft intruding on the operation is mitigated."

The FAA believes the limitations under which the petitioner will operate (i.e. VLOS and at or below 400 feet above ground level (AGL)) are sufficient mitigations to this risk so that the operations will not adversely affect safety.

Regarding the petitioner's statement that the PIC and observer will be able to communicate by voice, ALPA stated that the pilot and observer should be able to maintain a visual observation of the aircraft and area of operation when using voice communication. NAAA stated UAS observers must be present and able to communicate with the operator from the most minimal distance possible. The conditions and limitations regarding PIC and VO communications address those concerns.

ALPA asserted the UAS's lithium polymer batteries have numerous associated fire and explosion hazards as outlined in DOT/FAA/AR−09/55, "Flammability Assessment of Lithium-Ion and Lithium-Ion Polymer Battery Cell Designed for Aircraft Power Usage (January 2010)," and that the safe carriage of the batteries and the mitigations in place for known risks should be addressed. The referenced study was primarily conducted to determine how certain battery cells react in a fire situation aboard manned airplanes. Given the size of the battery and the operating conditions of the UAS, the FAA concludes that the use of a lithium polymer battery will not pose an undue safety risk for the proposed operations.

ALPA commented that command and control (C2) link failures are one of the most common failures on a UAS, and that lost link mitigations should require safe modes to prevent flyaways or other scenarios. The FAA has inserted conditions and limitations in this exemption to mitigate the risk associated with such failures.

ALPA also noted that the petitioner's proposed operations are for "compensation or hire," and therefore contends the pilot must hold at least a current FAA commercial pilot certificate with an appropriate category and class rating for the type of aircraft being flown, as well as specific and adequate training on the UAS make and model intended to be used. Similarly, ALPA asserted a current second-class airman medical certificate should be required. NAAA also commented on pilot qualification, stating—

> Just as manned aircraft pilots are required to undergo a rigorous training curriculum and show that they are fit to operate a commercial aircraft, so too must UAS operators. Holding a commercial certificate holds UAS operators to similar high standards as commercial aircraft operators and ensures they are aware of their responsibilities as commercial operators within the NAS. Medical requirements ensure they have the necessary visual and mental acuity to operate a commercial aircraft repeatedly over a sustained period of time.

The FAA has reviewed the knowledge and training requirements of sport, recreational, private and commercial certificates and concluded that a UAS PIC with a minimum of a sport pilot certificate, operating under this exemption, would not adversely affect operations in the NAS or present a hazard to persons or property on the ground.

ALPA opposed an exemption from the pre-flight action requirements of § 91.103. In addition, although the petitioner did not request an exemption from § 91.113, ALPA noted the petitioner must specify a means to meet see and avoid requirements in § 91.113 given the absence of an onboard pilot. The FAA notes that all flights must be operated within VLOS of the PIC and VO.

ALPA commented the aircraft will not have a barometric altimeter as required by 14 CFR § 91.121. ALPA stated that processes or mitigations must be in place to ensure the UA can accurately maintain including engineering processes, software development and control, electronic hardware development and control, configuration management, and design assurance to ensure the aircraft and its control system(s) operate to the same level of safety as other aircraft operated commercially in the National Airspace System (NAS).

Regarding the minimum safe altitude requirements of § 91.119, ALPA stated all aircraft in the NAS must operate to the same high level of safety. ALPA argued this includes the maintenance of a safe altitude for both airplanes and helicopters.

Regarding the fuel requirements of § 91.151, ALPA argued that using batteries as the only source of an aircraft's power is a substantial shift from traditional methods of propulsion, and requires further research to determine best safety practices.

ALPA also expressed concern that the petition makes no reference to compliance with, or a request for waiver from, 14 CFR 61.195, *Flight instructor limitations and qualifications*, which defines the requirements for flight instructors. A certificated flight instructor is

authorized to provide the instruction required for the certificates or ratings or currency listed in 14 CFR § 61.193. A person instructing on how to operate the UAS under the petitioner's training program would not need to be a certificated flight instructor because the instruction is not being provided for a certificate or rating listed in § 61.193. We note that none of the UAS operations proposed by the petitioner require such flight instruction because § 61.31(l) allows for operation of the UAS by an airman who is current per 14 CFR § 61.56 without a category and class rating. Instruction provided toward obtaining the pilot certificate required by this exemption would need to be provided by a certificated flight instructor.

Regarding §§ 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b), ALPA opposed the petitioner's attempt to avoid compliance with established aircraft maintenance and recordkeeping requirements. ALPA states the UAS should comply with the same level of safety as other aircraft operated commercially in the NAS. The FAA finds that adherence to the petitioner's operating documents, as required by the conditions and limitations below, is sufficient to ensure that safety is not adversely affected.

ALPA also expressed concern that the petitioner's request is not for a single specific operation or location, but for all operations of the same general type. ALPA stated that this results in a considerable increase in the FAA's oversight tasks. The FAA notes ALPAs concern and in order to minimize potential impact to the NAS, the FAA requires that each operator secure a Certificate of Authorization or COA which covers specific details of the petitioners operation. The FAA recognizes that UAS integration will generate new NAS access demand and will review and adjust accordingly.

NAAA noted that its members operate in low level airspace, and therefore clear low level airspace is vital to the safety of these operators. NAAA stated that seeing and avoiding other aircraft and hazardous obstructions is the backbone for agricultural safety, and that agricultural pilots depend on pilots of other aircraft to perform their see and avoid functions to prevent collisions. NAAA believes UAS operations at low altitudes will increase the potential for collision with agricultural aircraft.

The FAA recognizes these concerns and has incorporated associated conditions and limitations into this exemption, including: (a) a Notice to Airmen (NOTAM) issued for all operations;, (b) operations conducted within VLOS of the pilot in command (PIC) and the VO,; and (c) the UAS PIC must always yield right-of-way to manned aircraft.

NAAA stated that FAA airworthiness certification should be a requirement for all unmanned aircraft to operate within the NAS. NAAA recommended UAS be equipped with ADS-B or similar identification and positioning systems, strobe lights, high-visibility markings and registration numbers. NAAA also recommended UAS be operated strictly within the line-of-sight of the ground controller, with the assistance of a VO and well clear of any low-flying manned aircraft.

As discussed below, Section 333 of the FAA Modernization and Reform Act of 2012 authorizes the Secretary of Transportation to determine, considering a number of factors laid out in the statute, that an airworthiness certificate is not necessary for certain operations. The Secretary has made that determination in this case and therefore the aircraft operated by the petitioner will not need to be certificated by the FAA.

Airworthiness Certification

The UAS proposed by the petitioner is a DJI S–1000.

The petitioner requested relief from 14 CFR part 21, C*ertification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701,

delegated to me by the Administrator, Perfect View Aerial Media, LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Perfect View Aerial Media, LLC is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI S–1000 when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS-80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g. replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g. inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a

current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Colombia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N-Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported

to the FAA's UAS Integration Office (AFS-80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N-Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on April 30, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John S. Duncan
Director, Flight Standards Service

Albany
Atlanta
Brussels
Denver
Los Angeles
Miami
New York

McKenna Long & Aldridge LLP
1676 International Drive • Penthouse
McLean, VA 22102
Tel: 703.336.8800
mckennalong.com

Northern Virginia
Orange County
Rancho Santa Fe
San Diego
San Francisco
Seoul
Washington, DC

MARK E. MCKINNON
703.336.8708

EMAIL ADDRESS
mmckinnonf@mckennalong.com

October 14, 2014

U.S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
Washington, DC 20590

Re: Petition of Perfect View Aerial Media, LLC for an Exemption Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012

Dear Gentlemen:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("Reform Act") and 14 C.F.R. Part 11, Perfect View Aerial Media, LLC ("Perfect View"), hereby applies for an exemption from the Federal Aviation Regulations ("FARs") identified below, to allow commercial operations of small unmanned aerial vehicles (*i.e.*, "small unmanned aircraft" or "UAS").

This exemption is made based on the information in this petition, as well as the accompanying Perfect View Operations and Safety Manual ("Operations Manual") and the DJI S-1000 flight and maintenance manuals. Petitioner submits this supporting material as confidential documents under 14 C.F.R. § 11.35(b), as they contain confidential commercial and proprietary information that the Petitioner has not and will not share with others. Similarly, these documents contain operating conditions and procedures that are not available to the public and are protected from release under the Freedom of Information Act, 5 U.S.C. § 552 *et seq.*, and any other requirements established by the FAA pursuant to Section 333 of the FAA Reform Act.

For your convenience, the petition is organized as follows:

I. Description of Petitioner
II. Relevant Statutory Authority
III. Perfect View Aerial Media's Proposed UAS Operations Meet The Requirements Of Section 333 Of The Reform Act

I. DESCRIPTION OF PETITIONER

Perfect View seeks the requested exemptions to permit it to offer thermal and optical imaging and inspections of electric power infrastructure. In addition, Perfect View seeks authority to conduct flights for training and maintenance purposes in a sterile area free from hazards and persons.

Perfect View has adopted a philosophy that recognizes that UAS operations are a part of the complex, interconnected systems that make up the national airspace (NAS). In addition, Perfect View personnel have longstanding experience in conducting electric power infrastructure inspections and are well aware of the special safety issues that arise from working in this environment. The Perfect View Team consists of Professional Electrical Engineers, Electrical Operations Managers, FAA Licensed Pilots, Certified Thermographers and professional photographers.

The delivery of reliable electrical power and other utility services is essential in our demanding technological world. Manufacturers operating 24/7 depend on it to remain profitable, as do commercial enterprises at all levels. It is critical in everyday life, at home, on the road, in business and for public safety. That is why the most successful utility companies take every precaution to prevent sudden outages, and why thermal imaging has become a core predictive maintenance tool in their ongoing inspection programs. They depend on thermal imaging for intensive regular substation surveys as well as quick safety checks of energized equipment before beginning maintenance work. This helps utilities avoid costly service interruptions and exorbitant equipment losses. Deregulation in the electric utility industry in a number of states prompted utilities to become more cost-competitive, leading to the outsourcing of infrastructure work to contractors who could do the job more efficiently. Moreover, much of the transmission and distribution infrastructure in the United States is aging and in need of repair or replacement.

The Perfect View team has developed a system that incorporates the better of two emerging technologies: remotely piloted aerial systems and thermal imaging. Perfect View has developed operating practices to provide customers with a safe, low cost, comprehensive aerial inspection program, including:

- Substation Aerial Thermal
- Overhead Power Line Video and photographic vegetation growth inspections
- Overhead Power Line components Thermal inspections
- Post Storm damage assessment
- Live video Streaming (Thermal and HD)

The Perfect View team consists of individuals who have been active members of the UAS hobbyists community and have a combined experience of over 40 years operating small UAS. As a result, they have a keen awareness of issues affecting the safe use of UAS and the importance of thorough planning for both normal operations and for contingencies that might affect the safety of flight.

The contact information for Petitioner is as follows:

Perfect View Aerial Media, LLC
Attn: Ben Richardson
7379 Lions Gate Rd.
Suite 108
Coconut Creek, FL 33073
email:info@pvam.net

II. RELEVANT STATUTORY AUTHORITY

This petition for exemption is submitted in accordance with the Section 333(a) through (c) of the FAA Modernization and Reform Act of 2012. Congress has directed the FAA "to safely accelerate the integration of civil unmanned aircraft systems into the national airspace system." Pursuant to Section 333 of the Reform Act, the FAA Administrator is to permit unmanned aircraft systems to operate in the National Airspace System ("NAS") where it is safe to do so based on the following considerations:

- The UAS's size, weight, speed, and operational capability;
- Operation of the UAS in close proximity to airports and populated areas; and
- Operation of the UAS within the visual line of sight of the operator.[1]

Additionally, the FAA Administrator has general authority to grant exemptions from its safety regulations and minimum standards when the Administrator decides a requested exemption is in the public interest. *See* 49 U.S.C. § 106(f) (defining the authority of the Administrator); 49 U.S.C. § 44701(f) (permitting exemptions from §§ 44701(a), (b) and §§ 44702 – 44716, *et seq.*). A party requesting an exemption must explain the reasons why the exemption: (1) would benefit the public as a whole, and (2) would not adversely affect safety (or how it would provide a level of safety at least equal to the existing rules). *See* 14 C.F.R. § 11.81 (petitions for exemption).

III. PERFECT VIEW AERIAL MEDIA'S PROPOSED UAS OPERATIONS MEET THE REQUIREMENTS OF SECTION 333 OF THE REFORM ACT

The proposed operations in this petition for exemption qualify for expedited approval under Section 333 of the Reform Act. Each of the statutory criteria and other relevant factors are satisfied.

A. Approval is Warranted Based on the UAS's Size, Weight, Speed, and Operational Capability

Perfect View will employ the DJI S-1000 octocopter for its electric infrastructure inspection operations. This UAS has a maximum take-off weight of 24 pounds. The UAS's flight speed will not exceed 30 miles per hour, and it will not be flown in controlled airspace or at an altitude that exceeds 400 feet AGL. All flights will be flown in such a way that they can be

[1] *Id.* at § 333(b)(1).

safely terminated with a reserve battery power of 25% maximum charge. The DJI S-1000 does not carry any flammable propellant or fuel.

The DJI S-1000 also has redundant motor capabilities, and the vehicle is still capable of flight in the event a motor fails unexpectedly. The vehicle is capable of compensating for an engine loss automatically, and action is not required by the PIC.

The DJI S-1000 also has features that can alert the PIC to the possibility of a lost link before it occurs. Because the video link is at a shorter wavelength than the control links, it is more susceptible to loss than the control link. Loss of the video signal warns the PIC that action should be taken to ensure continued control. In the event the control link is lost, the UAS is also equipped with a failsafe setting that permits the vehicle to return to a preselected home point.

In the absence of a UAS, many of these inspections would have to be carried out by a helicopter or by sending someone up to perform the inspection manually. Utility inspections by helicopter are carried out at speed up to 70 knots, and the risk of a wire strike or other collision is much greater than with the UAS. See Helicopter Assoc. Int'l, Utilities, Patrol and Construction Safety Guide for Helicopter Operators at 2-1. Moreover, conducting helicopter inspections at certain locations, such as substations where several transmission lines converge, carry additional risks to helicopters. Id. at 3-3. It should also be kept in mind that, due to the low altitude of power line inspection flights, the ability of a helicopter pilot to successfully conduct an autorotation in the event of an engine failure may be limited or impossible. Id. at 2-3. For example, in 2009, the crew of a helicopter and a pedestrian on a sidewalk were killed when a helicopter conducting a power line inspection suffered an engine failure and could not autorotate successfully. http://www.tsb.gc.ca/eng/rapports-reports/aviation/2008/a08p0125/a08p0125.pdf.

Given the small size of the selected UAS and the restricted environment within which they will operate, this petition for exemption falls within the zone of safety, *i.e.,* an equivalent level of safety, in which Congress directed the FAA to permit commercial UAS operations by exemption pending completion of formal rulemaking.

B. Approval is Warranted Based on the Operational Restrictions Set Forth in the Operations Manual

The Perfect View Operations Manual and manufacturer's maintenance and flight manuals contain all of the procedures and limitations necessary to successfully perform inspection of power infrastructure. To assist the FAA in its safety assessment of Perfect View's operations, below is a summary of operational limitations and conditions which will ensure an equivalent or higher level of safety for operations conducted under current regulatory guidelines:

1. The UAS will weigh 24 pounds or less.

2. Flights will be operated within line of sight of a pilot and observer.

3. Maximum total flight time for each operational flight will be limited to the amount of time the UAS can be flown and still maintain a reserve battery power of no less than 25%.

4. Flights will be operated at an altitude of no more than 400 feet AGL and will not be conducted within navigable airspace.

5. Flights will be operated at a lateral distance of least 200 feet from any inhabited structures, buildings, vehicles or vessels, or from people not associated with the operation who have not given permission in advance of the operation.

6. Minimum crew for each operation will consist of the UAS Pilot, one or more Visual Observers as necessary to safely conduct the mission, and a Sensor Operator if required.

7. The Pilot will have a private pilot's license and is required to complete 64 hours of training and instruction prior to any flight in accordance with the training syllabus attached to the Operations Manual.

8. The observer designated for any operation will be required to complete the training course as set forth in the Operations Manual before performing his duties on any flight.

9. The UAS will operate in accordance with the safety and operational requirements of the Manual.

10. Prior to the operation, a Mission Plan will be created setting forth the limitations for the flight as well as contact and hazard information provided by the utility.

11. A NOTAM will be issued not more than 72 hours in advance of flight, but not less than 48 hours before flight.

12. Pilot, Visual Observer and Sensor Operator will at all times be able to communicate by voice.

13. A Certificate of Authorization will be obtained prior to flight.

14. All required permissions and permits will be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire or other appropriate governmental agencies.

15. The operator will coordinate all flights with the appropriate Flight Standards District Office.

16. If the UAS loses communications or loses its GPS signal, the UAS will have the capability to return to a pre-determined location within the operational area and land.

17. Contingency plans will be in place to safely terminate flight if there is a loss of communication between the pilot and the observer.

18. The UAS will have the capability to abort a flight in case of unpredicted obstacles or emergencies.

IV. REGULATIONS FROM WHICH EXEMPTION IS REQUESTED

The Federal Aviation Act expressly grants the FAA the authority to issue exemptions. This statutory authority, by its terms, includes exempting civil aircraft, as the term is defined under § 40101 of the Act, including UASs, from its safety regulations and minimum standards when the Administrator decides a requested exemption is in the public interest.[2]

Petitioner seeks an exemption from several interrelated provisions of 14 C.F.R. Parts 21, 45, 61 and 91 for purposes of conducting the requested operations using a UAS. Listed below are (1) the specific sections of 14 C.F.R. for which exemption is sought, and (2) the operating procedures and safeguards that Petitioner has established which will ensure a level of safety better than or equal to the rules from which exemption is sought.[3]

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[2] *See* 49 U.S.C. § 44701(f) (authorizing the grant of exemptions from requirements of regulations prescribed pursuant to Sections 44701(a) and (b) and Sections 44702 - 44716).

[3] *See* 14 C.F.R. § 11.81(e), which requires a petition for exemption to include:

> The reasons why granting the exemption would not adversely affect safety, or how the exemption would provide a level of safety at least equal to that provided by the rule from which you seek exemption.

A. 14 C.F.R. Part 21, Subpart H – Airworthiness Certificates and 14 C.F.R. § 91.203(a)(1)

The FAA has stated that no exemption is needed from this section if a finding is made under the Reform Act that the UAS selected provides an equivalent level of safety over aircraft normally used for the same application. These criteria are met, and therefore, no exemption is needed. See Grant of Exemption to Astraeus Aerial, Docket No. FAA-2014-0352 at 13-14, 22. If, however, the FAA determines that there are some characteristics of the chosen UAS that fail to meet the requirements of the Reform Act, an exemption is requested.

Equivalent Level of Safety

The UAS Perfect View will operate is safe taking into account its size, weight, speed, and operational capability. As set forth in Section II, Supra, the vehicle has a maximum take-off weight of 24 pounds, will be flown at less than 30 miles per hour and completely outside controlled airspace.

Power line inspection is currently carried out using helicopters that can weigh in excess of 6,000 pounds and carry a large load of fuel. Given the low altitude, helicopters cannot fly these missions as safely as a UAS, and there is a history of accidents that have killed not only flight crews but innocent bystanders on the ground due the inability to successfully autorotate in the event of an engine failure.[4] Similarly, the damage to critical infrastructure that results from a helicopter striking a transmission line or substation is far greater than if a small UAS has the same accident. As a result, national security is enhanced by substituting a UAS for a manned helicopter.

In all cases, an analysis of these criteria demonstrates that the UAS operated without an airworthiness certificate, in the restricted environment and under the conditions proposed, will be at least as safe as, or safer than, a conventional rotorcraft operating with an airworthiness certificate without the restrictions and conditions of the proposed UAS operations.

The aircraft itself does not need a means to communicate with other aircraft or ATC, because those capabilities will be with the pilot and observer who are not onboard. See Grant of Exemption, Docket FAA-2014-0352 at 13. In addition, no sense and avoid technology is necessary on the UAS because it will be operated at all times by visual line-of-sight. Id. The device has onboard capabilities to autonomously handle lost link situations.

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[4] http://www.tsb.gc.ca/eng/rapports-reports/aviation/2008/a08p0125/a08p0125.pdf.

B. 14 C.F.R. Part 27 Airworthiness Standards: Normal Category Rotorcraft

14 C.F.R. Part 27 sets forth the procedural requirements for airworthiness certification of normal category rotorcraft. To the extent the Petitioner's UAS would otherwise require certification under Part 27, Petitioner seeks an exemption from Part 27's airworthiness standards for the same reasons identified in the exemption request from 14 C.F.R. Part 21, Subpart H.

C. 14 C.F.R. §§ 91.9(c), 45.23(b) and 45.27(a): Aircraft Marking and Identification Requirements

Petitioner seeks an exemption from the aircraft marking and identification requirements contained in 14 C.F.R. §§ 91.9(c), 45.23(b) and 45.27(a).

- 14 C.F.R. § 91.9(c), Civil Aircraft Flight Manual, Marking and Placard requirements, provides that:

  > No person may operate a U.S.-registered civil aircraft unless that aircraft is identified in accordance with Part 45 of this chapter.

- 14 C.F.R. § 45.23(b), Markings of the Aircraft, states:

  > When marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport, "experimental," or "provisional," as applicable.

- 14 C.F.R. § 45.27(a), Rotorcraft, states:

  > Each operator of a rotorcraft must display on that rotorcraft horizontally on both surfaces of the cabin, fuselage, boom, or tail the marks required by § 45.23.

In its previous Grant of Exemption, the FAA determined that exemption from these requirements was warranted provided that the aircraft "have identification (N-Number) markings in accordance with 14 CFR part 45, Subpart C if the markings are as large as practicable." FAA Docket No. FAA-2014-0352.

Equivalent Level of Safety

Perfect View will mark all aircraft with their N-Number in a prominent spot on the fuselage with markings that are as large as practicable.

D. 14 C.F.R. § 91.9(b)(2): Civil Aircraft Flight Manual in the Aircraft and 14 C.F.R. § 91.203(a) and (b): Carrying Civil Aircraft Certification and Registration

Pursuant to 14 C.F.R. § 91.9(b)(2):

(b) No person may operate a U.S.-registered civil aircraft –

...

(2) For which an Airplane or Rotorcraft Flight Manual is not required by § 21.5 of this chapter, unless there is available in the aircraft a current approved airplane or Rotorcraft Flight Manual, approved manual material, markings and placards, or any combination thereof.

Pursuant to 14 C.F.R. § 91.203(a) and (b):

(a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following:

(1) An appropriate and current airworthiness certificate...

(b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under § 91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

Perfect View does not request an exemption from this section but instead notifies the FAA that, in accordance with FAA Office of Chief Counsel's Opinion dated August 8, 2014, the UAS flight manual, registration certificate and other documentation will be kept at the control station with the PIC during flight. The Chief Counsel's Office has held that for all UAS operations, this alternate method constitutes full compliance with the regulations.

E. 14 C.F.R. § 91.7(a): Civil Aircraft Airworthiness

Petitioner seeks an exemption from 14 C.F.R. § 91.7(a), which requires that a civil aircraft be in airworthy condition to be operated. The FAA has stated that no exemption is required to the extent that the requirements of Part 21 are waived or found inapplicable. Accordingly, Petitioner request that the requirements for Section 91.7 are treated in accordance with Section V(A), supra.

F. 14 C.F.R. § 91.103: Preflight Action

Petitioner seeks an exemption from 14 C.F.R. § 91.103, which requires a PIC to become familiar with specific information before each flight, including information contained in the FAA-approved Flight Manual on board the aircraft. While the PIC will be familiar with all information necessary to safely conduct the flight, an exemption is requested to the extent that an FAA-approved Flight manual is required.

Equivalent Level of Safety

An equivalent level of safety will be provided by following the Aircraft Operations Manual and flight manual provided by the manufacturer. The PIC will take all required preflight actions - including performing all required checklists and reviewing weather, flight battery requirements, landing and takeoff distance, aircraft performance data, and contingency landing areas - before initiation of flight. The Aircraft Operations Manual and manufacturer's flight manual will be kept at the ground station with the operator at all times.

G. 14 C.F.R. § 91.109(a): Flight Instruction

Petitioner seeks an exemption from 14 C.F.R. § 91.109(a), which provides that "[n]o person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls." UASs and remotely piloted aircraft, by their design, do not have functional dual controls. Instead, flight control is accomplished through the use of a device that communicates with the aircraft via radio communications.

Equivalent Level of Safety

Given the size and speed of the UAS, an equivalent level of safe training can still be performed without dual controls because no pilot or passengers are aboard the UAS, and all persons will be a safe distance away in the event that the UAS experiences any difficulties during flight instruction.

In addition, Petitioner has established a flight training program that will be administered by a certified flight instructor. That training program includes both classroom instruction as well as supervised flight training employing the same aircraft that will be used operationally to conduct power infrastructure inspections. Accordingly, Perfect View's proposed method of operation provides superior levels of safety.

H. 14 C.F.R. § 91.119: Minimum Safe Altitudes

Petitioner requests an exemption from the minimum safe altitude requirements of 14 C.F.R. § 91.119. Section 91.119 prescribes the minimum safe altitudes under which aircraft may

not operate, including 500 feet above the surface and away from any person, vessel, vehicle, or structure in non-congested areas. *See* 14 C.F.R. § 91.119(c). Section 91.119(d) allows for a helicopter to operate at less than those minimum altitudes when it can be operated "without hazard to persons or property on the surface," provided that "each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA."

Equivalent Level of Safety

Compared to flight operations with rotorcraft weighing far more than the maximum UAS weight proposed herein, and given the lack of flammable fuel, any risk associated with these operations is far less than those that presently exist with conventional aircraft. An equivalent level of safety will be achieved given the size, weight, and speed of the UAS, as well as the location where it is operated. In order to avoid any risk to aircraft, flight operations will be restricted to 400' AGL or below. As set forth in the Manual, the UAS will be operated in a restricted area, away from persons or structures not involved in the operation.

I. 14 C.F.R. § 91.121: Altimeter Settings

This petition seeks an exemption from 14 C.F.R. § 91.121, which requires a person operating an aircraft to maintain cruising altitude or flight level by reference to an altimeter that is set to the elevation of the departure airport or barometric pressure. An exemption is required to the extent that the UAS does not have a barometric altimeter, but rather a GPS altitude read out.

Equivalent Level of Safety

The FAA has stated that an equivalent level of safety can be achieved if the UAS will be operated at 400' or below and within visual line-of-sight in addition to GPS based altitude information relayed in real time to the operator. See Grant of Exemption to Astraeus Aerial, Docket No. FAA-2014-0352. As the attached Operations Manual indicates, the chosen UAS meets these requirements, and a zero altitude initiation point will be obtained prior to flight.

J. 14 C.F.R. § 91.151(a): Fuel Requirements for Flight in VFR Conditions

Petitioner requests an exemption from 14 C.F.R. § 91.151(a)'s fuel requirements for flight in VFR conditions. Section 91.151 states:

> (a) No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed –
>
> (1) During the day, to fly after that for at least 30 minutes; or

(2) At night, to fly after that for at least 45 minutes.

Here, the technological limitations on UAS battery power means that no meaningful flight operations can be conducted while still maintaining a 30 minute reserve. Perfect View proposes that all flights comply with this requirement by mandating that the aircraft be safely landed with no less than 25% of battery life remaining.

Equivalent Level of Safety

The FAA has stated that an equivalent level of safety is provided if the UAS flight is terminated with at least 25% reserve battery power still available. See Grant of Exemption to Astraeus Aerial, Docket No. FAA-2014-0352. The Operations Manual conforms to this limit, providing an equivalent level of safety.

K. 14 C.F.R. § 91.405(a), 91.407(a)(1), 91.409(a)(2); 91.417(a) and (b): Maintenance Inspections

Petitioner seeks an exemption from the maintenance inspection requirements contained in 14 C.F.R. § 91.405(a), 91.407(a)(1), 91.409(a)(2); 91.417(a) and (b). These regulations specify maintenance and inspection standards in reference to 14 C.F.R. Part 43. *See, e.g.,* 14 C.F.R. § 91.405(a) (stating that each owner or operator of an aircraft "[s]hall have the aircraft inspected as prescribed in subpart E of this part and shall between required inspections …have discrepancies repaired as prescribed in part 43 of this chapter"). An exemption to these regulations is needed because Part 43 and these sections only apply to aircraft with an airworthiness certificate, which the UAS will not have.

Equivalent Level of Safety

An equivalent level of safety will be achieved because maintenance and inspections will be performed in accordance with the UAS Manufacturer's Manual, as referenced in the Operations Manual. As provided in the Operations Manual, flights will not be conducted unless a flight operations checklist is performed that includes all of the aircraft's components. The Operations Manual also sets requirements for maintenance log books and record keeping as well as routine and post-flight maintenance. The Manual sets requirements for both annual maintenance and preventative maintenance based on hours of flight.

L. 14 CFR § 61.113: Private Pilot Privileges And Limitations

Petitioner seeks exemption from 14 CFR § 61.113, which restricts private pilot certificate holders from flying aircraft for compensation or hire, and would also require a second class medical certificate. The purpose of Part 61 is to ensure the skill and competency of any PIC matches the airspace in which the PIC will be operating, as well as requiring certifications if the private pilot as carrying passengers or cargo for hire. In this case, while the UAS will be

operated as part of a commercial operation, it carries neither passengers nor cargo. In the Grant of Exemption in FAA Docket No. FAA-2014-0352, the FAA determined that the unique characteristics of UAS operation outside of controlled airspace did not warrant the addition cost and restrictions attendant with requiring a the PIC to have a commercial pilot certificate and class II medical certificate.

Perfect View will employ licensed private pilots as PIC for their operation. The restrictions Perfect View has placed on its UAS operations meet or exceed the restrictions similarly imposed on Astraeus Aerial in FAA Docket No. FAA-2014-0352. Perfect View will operate in a sterile area way from persons and property not involved in the inspection. It will be flown based on VLOS and below 400' AGL. A NOTAM will be issued between 48 and 72 hours before the flight is to occur, and the flight will be coordinated with the applicable FSDO.

Equivalent Level of Safety

In addition to these flight restrictions, Perfect View will further ensure safe operation by requiring that any PIC be thoroughly versed not only in airspace and communication issues pertaining to all aircraft operators but also in the unique aspects of UAS flight. Accordingly, as set forth in the Operations Manual, Perfect View has created specific training programs for both pilots and observers to meet this need. The course syllabus is attached to the Operations Manual. All training will be provided by an FAA-certified Flight Instructor. Petitioner believes that this system will provide a higher level of competency and proficiency for its pilots than simply permitting those with either a private pilot license to act as PIC by default. In addition, all observers and PIC will have a class III medical certificate.

V. DRUG AND ALCOHOL PROGRAM

As set forth in the Manual, Perfect View is committed to a drug-free work place and the right of the flying public it serves to safe and efficient air transportation. All employees of Perfect View who perform safety sensitive and/or security related functions are prohibited from performing work if they have alcohol or a prohibited drug in their system.

VI. PUBLIC INTEREST

Granting Perfect View's exemption request furthers the public interest. National policy set by Congress favors early integration of UAS into the NAS in controlled, safe working environments such as those proposed in this petition. In addition, maintaining industrial safety has been a priority of state and local governments for decades. By their nature, each of the proposed uses of a UAS offer superior safety to performing the same tasks with conventional aircraft or rotorcraft.

In addition, the public also has an interest in reducing the hazards and emissions associated with alternate use of helicopters to conduct similar inspection operations. The UAS in

question is very light weight and does not carry any flammable fuel, further reducing the risk from any potential accident.

VII. PRIVACY

All flights will be conducted in accordance with any federal, state or local laws regarding privacy.

VIII. FEDERAL REGISTER SUMMARY

Pursuant to 14 C.F.R. Part 11, the following summary is provided for publication in the Federal Register, should it be determined that publication is needed:

Perfect View seeks an exemption from the following rules:

14 CFR Part 21, Subpart H; 14 CFR Part 27; 14 CFR 45.23(b); 14 CFR § 61.113; 14 CFR 91.7(a); 14 CFR 91.9(b)(2); 14 CFR 91.103; 14 CFR 91.109(a); 14 CFR 91.119; 14 CFR 91.121; 14 CFR 91.151(a); 14 CFR 91.203 (a) & (b); 14 CFR 91.405(a); 14 CFR 91.407(a)(1); 14 CFR 91.409(a)(2); 14 CFR 91.417 (a) & (b).

Approval of these exemptions will allow Perfect View to offer thermal and photographic inspection of power infrastructure, including power lines and substations. The exemptions will enhance safety by reducing risk to the general public and property owners from the substantial hazards associated with performing equivalent work with conventional rotorcraft.

IX. CONCLUSION

Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012—size, weight, speed, operating capabilities, proximity to airports and populated areas, operation within visual line of sight, and national security—provides more than adequate justification for the grant of the requested exemptions to permit Perfect View to operate the selected UAS and provide inspection services for power infrastructure.

Granting the requested exemption will benefit the public interest as a whole in many ways, including (1) significantly improving safety and reducing risk by alleviating human exposure to danger, and (2) improving the quality of services and decreasing operating costs compared with conventional flight operations.

If you have any questions or require any additional information, please do not hesitate to call.

MCKENNA LONG & ALDRIDGE, LLP

Mark E. McKinnon, Esq.

Attachments: PVAM Operations Manual (submitted as a Confidential Document under 14 C.F.R. § 11.35(b) and exempt from disclosure under the Freedom of Information Act, 5 U.S.C. § 552 *et seq.*, and any other requirements established by the FAA pursuant to Section 333 of the Reform Act).