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

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

May 21, 2015

Exemption No. 11637
Regulatory Docket No. FAA–2015–0599

Mr. Greg Graham
Chief Executive Officer
AMK Services LLC
9291 Crouse Willison Road
Johnstown, OH 43031

Dear Mr. Graham:

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.

By letter posted March 10, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of AMK Services LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct inspections and monitoring for the public safety, pipeline construction, and communications industries.

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

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner. The FAA received one individual comment in opposition to the petition. In granting this exemption, the FAA has determined that the proposed operations can safely be conducted under the conditions and limitations of this exemption. As with exemptions issued to Aeryon Lab, Astraeus Aerial, Clayco, Inc., and VDOS Global, LLC, failure to comply with the document's conditions and limitations is grounds for immediate suspension or rescission of the exemption.

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Phantom 2.

The petitioner requested relief from 14 CFR part 21, *Certification 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, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, 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, AMK Services 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, AMK Services 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 Phantom 2 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 Columbia, 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 5 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 May 31, 2017, unless sooner superseded or rescinded.

Sincerely,

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

From: AMK Services,

To: U.S. Department of Transportation
Attn: Docket Operations
Secretary of Transportation
West Building Ground Floor, Room w12-140
1200 New Jersey Avenue, SE. Washington, DC 20590-001

SUBJECT: SMALL UNMANNED AIRCRAFT FOR USE IN TOWER AND PIPELINE CONSTRUCTION EXEMPTION REQUEST

AMK Services is respectfully requesting and applying for Exemptions by Section 333 – FAA Reform and Modernization Act of 2012 and Part 11- Federal Aviation Regulations from 14 C.F.R. § 21, Subpart H; 14 C.F.R. § 43.7; 14 C.F.R. § 43.11; 14 C.F.R. § 45.21; 14 C.F.R. § 45.23(b); 14 C.F.R. § 45.25; 14 C.F.R. § 45.27; 14 C.F.R. § 45.29; 14 C.F.R. § 47.3(b)(2); 14 C.F.R. § 61, Subpart E; 14 C.F.R. § 91.7(a); 14 C.F.R. § 91.9(b)(2); 14 C.F.R. § 91.9(c); 14 C.F.R. § 91.103; 14 C.F.R. § 91.105; 14 C.F.R. § 91.109; 14 C.F.R. § 91.113(b); 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. § 91.151(a); 14 C.F.R. § 91.203; 14 C.F.R. § 91.215; 14 C.F.R. § 91.405(a) and (d); 14 C.F.R. § 91.407(a)(1); 14 C.F.R. § 91.409(a)(2); 14 C.F.R. § 417(a) and (b).

Dear Sir/Ma'am:

On behalf of the AMK Services, LLC. ("AMK Services"), we submit to you this Request and Application for Exemptions from certain requirements of the FAA Reform and Modernization Act of 2012 and Regulations described above and in our proposal. In support of our Request and Application, we will describe the operations and equipment to be used by AMK Services, the necessity and reasons for exemptions as well as the precautions that AMK Services will implement and commit to follow.

We seek an exemption from the aforementioned Regulations to operate our unmanned aerial system commercially and lawfully. We seek relief of FAA restrictions for commercial UAS use to have the ability to offer asset inspections for the Public Safety Industry, Pipeline Construction and Communications Industry. By granting our request, we will be able to provide a safer and more economical approach to the inspection of communication towers, and pipelines associated with our industry. Our UAV is certified to work around communication towers, pipelines and power structures while maintaining a safe distance from the structures as set forth in federal, state and local regulations.

AMK Services respectfully request that the FAA grant our exemption request and are willing to work with and share all information to benefit the FAA to ensure that lessons learned and procedures are reported back to the FAA for future use in guidelines and regulations.

Table of Contents

1. Applicant Information - AMK Services, LLC.

AMK Services, LLC is a full service communications company with over 50 combined years of sales, engineering, implementation, project management and ongoing maintenance of Public Safety Grade communication systems. We have substantial experience in the engineering, implementation and maintenance of public safety grade, manufacturing and construction company communication systems. We extensive experience in microwave backhaul solutions, Project 25 solutions, UHF/VHF solutions and the integration of, camera systems and fiber backhaul.

AMK Services is in the business of providing complete communications solutions to customers throughout the Midwest. It is our belief that by providing our customers with more cost effective tower and pipeline communications solutions we can ensure that the police, fire and utility companies reduce potential safety issues and receive a better return on investment of their ever shrinking tax dollars.

AMK staff qualifications include a number of Degreed System Engineers, Senior System Technicians, P25 System Technicians, Project Managers, Vehicle Specialist, and Journeymen Technicians. All AMK personnel are background checked through a national screening process and then a local background check for each customer project. All AMK employees are required to complete a pre-employment drug screening. AMK also has instituted a monthly random drug screening policy for all employees and incorporated a companywide safety program.

The name and address of the applicant is: AMK Services LLC.
Attn: Greg Graham.
Chief Executive Officer
9291 Crouse Willison Road
Johnstown, Ohio 43031
740-975-1127
Greg@amk-services.com
www.AMK-Services.com

2. Description of Operations

AMK Services requests permission to operate a small, unmanned, lightweight and relatively inexpensive aircraft system, the DJI Phantom 2 Quadcopter ("Phantom 2") under controlled conditions in airspace that is limited and predetermined. This will enable AMK Services to safely and efficiently inspect and monitor Public Safety Towers and Pipeline Right of ways and other customers managed by AMK Services

One of the major costs and pitfalls in any communication business is the hiring and monitoring of tower climbers. Although necessary for the installation of much of our equipment, there is an extensive cost and risk that is associated with tower climbs for the sole purpose of inspecting lines, cables and microwave dishes. In particular, the recent damages incurred to our customer's towers and their equipment during the winter storms required tower crews and AMK personnel to make decisions about structural integrity from the ground without a way to perform up close inspections prior to climbing. Ice and snow build up on the towers as well as lightning strikes during the summer require visual inspection by tower climbers that must ascend towers after storms to determine line, antenna and microwave dish damage and misalignment. These costs and risks can be significantly reduced if not eliminated by the use of Unmanned Arial Vehicles to determine the extent of damage and misalignment prior to towers crews being dispatched. Additionally, by understanding what equipment and replacement parts are needed ahead of time, AMK personnel can reduce the number of climbs by half. This process would significantly reduce the cost to local municipalities whose budgets are already strapped while at the same limit climbs by inspecting tower structures remotely. The Unmanned drone is ideal for this industry and has unlimited potential in reducing cost while significantly reducing the need for tower climbs

Your approval of AMK Services' request of the Exemptions stated herein will benefit the public, Tower Climbing personnel. The Exemptions will also reduce direct and indirect financial impacts on each of our customers and reduce or eliminate expensive surveying and aerial photography by conventional manned aircraft. The Exemptions will enable AMK Services to perform and provide real time data to Towers Crews, Cities and Counties to determine tower and antenna integrity and repair solutions without potentially dangerous climbs.

2.1 Description of UAS

AMK Services requests the Exemptions for use of the Phantom, a small unmanned aircraft system ("UAS"), for nonprofit land and conservation easement management, site inspections, monitoring, conducting necessary aerial surveying, mapping, and aerial photography.

2.1.1 Flight Time and Weight

The high capacity, high performance 5200mAh Lithium Polymer battery offers up to 25 minutes of flight time. It provides battery capacity data, over charge/discharge protection, as well as maintenance reminders making the battery extremely safe and reliable.
The Phantom weighs less than three pounds.

2.1.2 Live GPS Feedback

The Phantom is equipped with GPS that displays the current position of the Phantom in relation to the operator. Exceeding the control range of the remote control triggers the Phantom to automatically fly back to the original takeoff point and land safely.

2.1.3 Precision Flight and Stable Hovering

An integrated GPS auto-pilot system that offers position holding, altitude lock and stable hovering allows you to focus attention to be focused on shooting.

2.1.4 Mobile Vision

The operator may track the current flight and see what the Phantom sees through a mobile device.

2.1.5 Manufacturer Updates

The Phantom can connect to computers to receive manufacturer (DJI) firmware and applications, updates, news, alerts, and support.

2.1.6 Remote Control

The remote control contains a gimbal control dial, a trainer port, a built-in rechargeable LiPo battery with a capacity of 2000mAh, battery level LED indicators, and a throttle locking feature.

2.1.7 Antistatic Compass

The Phantom has an anti-static compass with a protective shell. Together, these equipment features ensure AMK Services and the UAS will "not create a hazard to users of the national airspace system or the public."

2.1.8 Flight Limitation Application

In order to increase flight safety and prevent accidental flights in restricted areas, the firmware for the Phantom 2 series includes a No Fly Zone feature. These zones have been divided into two categories that prevent inadvertent flyover of restricted areas that are uploaded into the onboard computer prior to flight and as part of the pre-flight checklist

The Phantom has software to prevent the UAS from flying into restricted areas, such as airports. The software creates a five mile safety zone around the restricted area. The operator is notified when the Phantom is 330 feet away from a safety zone. If the Phantom is five miles from an airport, the UAS cannot fly higher than 400 feet. This height limit decreases as the UAS moves closer to the airport so that when the UAS is 1.5 miles away, the Phantom may not fly higher than 35 feet. If this occurs, the operator has full control of the Phantom's movement, except that the Phantom will automatically descend to the restricted height. The operator is prevented from initiating flight if the Phantom is within 1.5 miles from a restricted area. If the operator accidentally flies into a safety zone due to a loss of GPS signal, the Phantom will land immediately once the signal returns. If this occurs, the operator may control the Phantom, with the exception that the operator cannot make the UAS ascend in altitude. In addition, the Phantom has features that allow the operator to manually set height limitations and limit how close a Phantom may fly to a safety zone.

2.1.9 Phantom Equipment Factory Specifications

2.1.9.1 Key Features

- Stabilization Gimbal 3- axis Camera Stabilization Gimbal
- Video Downlink Max 700m Wi-Fi Connection
- Camera 14 Megapixels/1080p
- Controllable Range -90° – 0° (Vertical)
- Ground Station Built into the DJI Phantom App
- Remote Control New version (left dial, built-in LiPo battery)
- 800m (FCC), 5,8 Ghz preinstalled smartphone holder
- Max Flight Time 25 minutes

2.1.9.2 Aircraft

- Weight (Battery & Propellers included): 1284g (approximately 2.8 lbs)
- Battery 5200mAh LiPo Battery
- Max Ascent/Descent Speed: Ascent: 6 m/s
- Descent: 2m/s
- Max Flight Speed: 15 m/s
- Max Yaw Angular Velocity: 200°/s
- Max Tilt Angle: 35°
- Diagonal Length: 350mm

2.1.9.3 Camera

- Gimbal Pitch Control Range: 0°-90°
- Operating Environment Temperatures: 0°C-40°C
- Sensor Size: 1/2.3”
- Effective Pixels: 14 Megapixels
- FOV: 110°/85°

Information from www.dji.com/products/compare-phantom. See also DJI – Phantom 2 Specifications “Exhibit B” attached hereto.

2.1.9.4 Remote Control

- Operating Frequency: 5.728 GHz-5.85 GHz
- Communication Distance (Open Area): CE: 400m
- FCC: 800m
- Receiver Sensitivity (1% PER): -93dBm
- Transmitter Power (EIRP): CE: 25mw
- FCC: 100mw
- Working Voltage: 120 mA@V
- Battery LiPo Battery: 3.7V 2000mAH
- Left Dial: Available
- Throttle Lock: Available
- Trainer Port: Available

2.1.9.5 Range Extender

- Operating Frequency: 2412-2462 MHz
- Communication Distance (Open Area): 500-700m
- Transmitter Power: 20dBm
- Power Consumption: 2W

2.2 Limited and Predetermined Use

AMK Services agrees to be bound by the following limitations and conditions when conducting management, inspection, mapping, surveying, and monitoring operations under an FAA issued exemption:

- Phantom Weight: The UAS will weigh less than three pounds including energy source(s) and equipment. Operations authorized by this grant of exemption are limited to the following aircraft: DJI Phantom 2. [See "Exhibit B" attached hereto.]
- Limited Flight Speed: The UAS will not be flown at a speed exceeding a ground speed of 30 knots.
- Flight Altitude Limit: Flights will be operated at an altitude of no more than 400 feet above ground level.
- VLOS: The UAS will be operated within the visual line of sight ("VLOS") of the pilot in command at all times. This requires the pilot in command ("PIC") to be able to use human vision unaided by any device other than corrective lenses.
- VO: All operations will use a visual observer ("VO"). The VO may be used to satisfy the visual line of sight requirement, as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times.

2.3 Preflight Inspection

Prior to each flight, the PIC will inspect the UAS to ensure it is in a condition for safe flight. 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 re-inspected and found to be in a condition for safe flight.

If there is a ground control station, it must be included in the preflight inspection. All maintenance and alterations will be properly documented in the UAS records.

2.4 Flight Functional Test

Any UAS that has undergone maintenance or alterations that affect UAS operations or flight characteristics such as the replacement of a flight critical component will undergo a flight functional test. The PIC who conducts the flight functional test will make an entry in the UAS aircraft records of the flight.

2.5 Manufacturing Requirements

AMK Services will follow the manufacturer's aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements. At a minimum, this will include requirements for the following: actuators, transmission (single rotor), power plant (motors), propellers, electronic speed controller, batteries, mechanical dynamic components (single rotor), remote command and control, and ground control station (if used).

2.6 Operating and Flight Precautions

- The UAS will not be operated directly over any person, except authorized and consenting personnel, or below an altitude that is hazardous to persons or property on the surface in the event of a UAS failure or emergency.
- Regarding the distance from participating persons, those persons must be essential to the mandatory conservation and environmental monitoring operations and any surveying operations. Because these procedures are specific to participating persons, no further Flight Standards District Office ("FSDO") or Aviation Safety Inspector approval is necessary for reductions to the distances specified.
- Regarding the distance from non-participating persons, AMK Services will ensure that no persons are allowed within 500 feet of the area except those consenting to be involved and necessary for the mandatory conservation and environmental monitoring operations and any surveying operations. This provision may be reduced to no less than 200 feet if it would not adversely affect safety and the Administrator has approved the reduction.
- If the UAS loses communications or loses the GPS signal, the UAS will return to the original takeoff point.
- The UAS will abort the flight in the event of unpredicted obstacles or emergencies. Each UAS operation must be completed within 25 minutes flight time or with 25% battery power remaining, whichever occurs first.

2.7 COA

AMK Services will obtain an Air Traffic Organization ("ATO") issued Certificate of Waiver or Authorization ("COA") prior to conducting any operations. This COA will require AMK Services to request a Notice to Airmen ("NOTAM") not more than 72 hours in advance, but not less than 48 hours prior to operations.

2.8 Maintenance

AMK Services will develop procedures to document and maintain a record of the UAS maintenance, preventative maintenance, alterations, status of replacement/overhaul component parts, and the total time in service of the UAS.

2.9 Safety Bulletins

The UAS will be operated by AMK Services in compliance with all manufacturer Safety Bulletins.

2.10 Radio Frequency

Before conducting operations, the radio frequency spectrum used for operation and control of the UAS will comply with the Federal Communications Commission ("FCC") or other appropriate government oversight agency requirements.

2.11 Plan of Activities

At least three days before scheduled use, AMK Services will submit a written Plan of Activities to the local FSDO with jurisdiction over the area of proposed UAS use. The three-day notification may be waived with the concurrence of the FSDO. The Plan of Activities will include at least the following:

- Date and times for all flights.
- Name and phone number of the operator of the UAS under this grant.
- Make, model, and serial or FAA issued N-number or registered number of UAS to be used.
- Name and age of the UAS's PIC involved.
- Statement that the operator has obtained permission from property owners and/or local officials.
- The signature of exemption-holder or representative.
- Description of the flight activity, including maps and diagrams of any area, city, town, county and/or state over which UAS use will be conducted and the altitudes essential to accomplish the operation. UAS operations will not be conducted during night, as defined in 14 C.F.R. § 1.1.
- All operations will be conducted under visual meteorological conditions ("VMC").

2.12 Documents

The manufacturer's Flight User Manual will be available to the PIC at the ground control station or ground control point of the UAS any time the aircraft is operating.

2.13 Right of Way

The UAS will remain clear of and yield the right of way to all manned aircraft operations and activities at all times.

2.14 Operations

- The UAS operations will not be conducted at night, as defined in 14 C.F.R. § 1.1. All operations will be conducted under VMC.
- The UAS will not be operated by the PIC from any moving device or vehicle.
- The UAS will not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than three statute miles from the PIC.
- The UAS will not be operated in Class B, C, or D airspace. The UAS will not be operated within five nautical miles of the geographic center of a non-towered airport as denoted on current FAA-published aeronautical chart unless a letter of agreement with that airport's management is obtained, and the operation is conducted in accordance with Notice to Airmen as required by the Applicant's COA. The letter of agreement with the airport management will be made available to the Administrator upon request.

2.15 Accident Reports

Any incident, action, 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 Integration Office (AFS-80) within 24 hours. Accidents will be reported to the National Transportation Safety Board ("NTSB"). Further flight operations will not be conducted until the incident, accident, or transgression is reviewed by the AFS-80 and authorization to resume is provided.

3. AMK Services' Request for Exemptions

AMK Services understands that the government is readying rules largely favorable to companies that want to use small drones for commercial purposes, according to a federal analysis, potentially leading to the widespread flights by unmanned aircraft performing aerial photography, crop monitoring, inspections of cell towers and bridges and other work. Due to the Phantom's small size, light weight (less than three pounds), built-in safety features, and the remote, rural, and restricted locations where the Phantom will be operated, AMK Services can meet all requirements of safe UAS operations envisioned by Congress.

The UAS's size, weight, limited range and flight capacity, and restricted use on towers and pipelines managed, inspected, and monitored by AMK Services in no way presents a national security issue. The Exemptions requested by AMK Services provide for the equivalent, if not a higher, level of safety than the current regulatory scheme provides due to the dangers associated with much larger, heavier, and faster conventional manned aircraft.

In the alternative, AMK Services' operations meet the "special purpose operations" descriptions of 14 C.F.R. § 21.25 (b)(3)Aerial Surveys, Photography, and Mapping.

3.1 Exemption Requests

Based on the facts and descriptions we have provided for you on behalf of AMK Services, we respectfully request that the FAA grant the following requested exemptions:

14 C.F.R. § 21, Subpart H; 14 C.F.R. § 43.7; 14 C.F.R. § 43.11; 14 C.F.R. § 45.21; 14 C.F.R. § 45.23(b); 14 C.F.R. § 45.25; 14 C.F.R. § 45.27; 14 C.F.R. § 45.29; 14 C.F.R. § 47.3(b)(2); 14 C.F.R. § 61, Subpart E; 14 C.F.R. § 91.7(a); 14 C.F.R. § 91.9(b)(2); 14 C.F.R. § 91.9(c); 14 C.F.R. § 91.103; 14 C.F.R. § 91.105; 14 C.F.R. § 91.109; 14 C.F.R. § 91.113(b); 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. § 91.151(a); 14 C.F.R. § 91.203; 14 C.F.R. § 91.215; 14 C.F.R. § 91.405(a) and (d); 14 C.F.R. § 91.407(a)(1); 14 C.F.R. § 91.409(a)(2); 14 C.F.R. § 417(a) and (b).

3.1.1 14 C.F.R. 21, Subpart H: Airworthiness Certificate

AMK Services requests an exemption from 14 C.F.R. 21, Subpart H. This Subpart establishes the procedures for the issuance of an airworthiness certificate. AMK Services requests an exemption from Part 21, Subpart H because the Phantom meets an equivalent level of safety pursuant to Section 333 of the Reform Act due to its small size, light weight, and remote rural operating environment.

3.1.2 14 C.F.R. 43

3.1.2.1 43.7: Persons Authorized to Approve Maintenance, Rebuilding, and Operation

AMK Services requests an exemption from 14 C.F.R. 43.7. This part provides that the holder of a mechanic certificate or a repair station certificate may approve an aircraft, airframe, aircraft engine, propeller, appliance, or component part for return to service. AMK Services operators will conduct inspections and maintenance based on maintenance guidelines provided by DJI, the manufacturer of the Phantom. The capabilities of AMK Services operators to maintain and repair the UAS will meet the requirements for an equivalent level of safety pursuant to Section 333 for this type of UAS, its intended use, and the remote rural operating environment.

3.1.2.2 43.11: Records for Inspections

AMK Services requests an exemption from 14 C.F.R. 43.11. This part provides that maintenance record entries be maintained, that the inspector list discrepancies, and to affix placards to the aircraft. This UAS, due to its small size, does not have room for placards to be placed in or on it and no inspections for UAS have been certified by FAA at the present time. However, as a condition to the grant of the exemption, AMK Services is willing to keep records and log books of all maintenance and repairs.

3.1.3 14 C.F.R. 45

3.1.3.1 45.21: General

AMK Services requests an exemption from 14 C.F.R. 45.21. This part provides that except as provided in § 45.22, no person may operate a U.S.-registered aircraft unless that aircraft displays nationality and registration marks in accordance with the requirements of this section and §§ 45.23 through 45.33. There are no current procedures for obtaining a registration mark for UAS by the FAA.

However, as a condition to the grant of the exemption, AMK Services is willing to be assigned a registration number and to display it where practicable as addressed in this Request and Application for Exemptions relative to Parts 45.23, 45.27, and 45.29, below.

3.1.3.2 45.23 (b): Marking of the Aircraft

AMK Services requests an exemption from 14 C.F.R. 45.23(b). This regulation requires: 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.

Even though the UAS will have no airworthiness certificate, AMK Services requests an exemption from this requirement since the Phantom will have no entrance to the cabin (no cabin), cockpit (no cockpit), or pilot station on which the word “Experimental” or such other required description can be placed. Given the size of the UAS, two-inch lettering will be impossible, AMK Services is willing to place the word “Experimental” on the UAS in compliance with § 45.29(f). The equivalent level of safety will be provided by having the UAS marked as required by § 45.29(f) where the pilot, observer

and others working with the UAS will see the identification of the UAS as "Experimental" or such other required lettering.

3.1.3.3 45.25: Location of Marks on Fixed-Wing Aircraft

AMK Services requests an exemption from 14 C.F.R. 45.25. The UAS is a multirotor, quadcopter, model-sized aircraft and is not a fixed-wing aircraft. Therefore, 14 C.F.R. 45.25 by its terms does not apply.

3.1.3.4 45.27: Location of Marks: Nonfixed-Wing Aircraft

AMK Services requests an exemption from 14 C.F.R. 45.27. This part provides that 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. The UAS, due to its small size, does not have a cabin, fuselage, boom or tail to display the marks required by § 45.23.

3.1.3.5 45.29: Size of Marks

AMK Services requests an exemption from 14 C.F.R. 45.29. This part provides at subpart (3) that the registration marks for rotorcraft must be at least 12 inches high. The UAS, due to its small size, does not have any surface area large enough to display marks anywhere near 12 inches high. However, as a condition to the grant of the exemption, AMK Services is willing to place an aircraft mark on one or more of the "arms" of the UAS. The size of the marking will be determined by the size of the "arm" being used and may be less than one inch in size.

3.1.4 14 C.F.R. 47.3(b)(2): Registration Required

AMK Services requests an exemption from 14 C.F.R. 47.3(b)(2). This part provides: (b) No person may operate an aircraft that is eligible for registration under 49 U.S.C. 44101-44104, unless the aircraft:

- Has been registered by its owner; [or]
- Is carrying aboard the temporary authorization required by § 47.31(c).

There are no current procedures for obtaining a registration mark for UAS by the FAA. However, as a condition to the grant exemption, AMK Services is willing to be assigned a registration number provided by FAA and to display it where practicable as addressed in this Request and Application for Exemptions relative to Parts 45.23, 45.27, and 45.29, above.

3.1.5 14 C.F.R. 61, Subpart E – Certification: Private Pilots

AMK Services requests an exemption from 14 C.F.R. 61, Subpart E. Section 61, Subpart E describes the requirements for issuance of private pilot certificates and the general operating rules for persons who hold those certificates and ratings. Because the UAS will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PIC operating the UAS to have completed a UAS flight training course before flying the UAS (See DJI – Phantom Pilot Training Guide, Phantom 2 User Manual, and Courses of Training fro Certification).

Unlike a conventional manned aircraft that carries the pilot and passengers, the UAS is small in size, weighs three pounds or less, is remotely controlled, and has no humans on board. The area of operation is controlled and restricted, and all flights are planned and coordinated in advance. The level of safety exceeds that provided by a single individual holding a commercial pilot's certificate

operating a conventional manned aircraft. The risks associated with the operation of the UAS are much reduced from the level of risk associated with conventional manned aircraft operations contemplated by Part 61. Allowing the Exemptions and special purpose operations of the UAS as requested by AMK Services with an operator who has met the requirements of safety and training as stated in the DJI – Phantom Training Guide and User Manual. AMK has also completed the Scheduled DJI Phantom Training Course, and will have completed the Pilot Training program Certificate from The Unmanned Experts Training Academy which exceeds the present level of safety prescribed by 14 C.F.R. § 61.113 (a) and (b). Additionally, in the interim, AMK Services has on staff a fully licensed Commercial pilot. His license and information is presented in Exhibit "E"

3.1.6 14 C.F.R. 91

- See DJI – Phantom 2 Training Guide, "Exhibit "A" attached hereto.
- See DJI – Phantom 2 User Manual, "Exhibit "B" attached hereto.
- See DJI – Phantom 2 Release Notes Dates Feb 2015l, "Exhibit "C" attached hereto.
- See List of Training Courses from Unmanned Experts, "Exhibit "D" attached hereto; http://www.unmannedexperts.com/wp-content/uploads/140610-UMEX-Training-Course-Brochure-US.pdf

AMK Services requests an exemption from 14 C.F.R. 91.7(a). The regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. Given the small size, light weight, and low noise level output of the UAS, the requirements for maintenance, and the use of safety checklists prior to each flight, an equivalent level of safety will be provided.

3.1.6.1 91.9(b)(2): Civil Aircraft Flight Manual [in the Aircraft], Marking, and Placard Requirements

AMK Services requests an exemption from 14 C.F.R. 91.9(b)(2). Section 91.9(b)(2) provides: No person may operate a U.S.-registered civil aircraft 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.

The UAS, given its small size and configuration, has no ability or place to carry such a flight manual on the aircraft, not only because there is no pilot on board, but because there is no room or capacity to carry such an item on the UAS.

The equivalent level of safety will be maintained by keeping the manufacturer's Training Guide and User Manual at the ground control point where the operator flying the UAS will have immediate access to it.

3.1.6.2 91.9(c): Civil Aircraft Flight Manual, Marking, and Placard Requirements

AMK Services requests an exemption from 14 C.F.R. 91.9(c). This part provides: No person may operate a U.S.-registered civil aircraft unless that aircraft is identified in accordance with part 45 of this chapter.

As stated above, there is no current registration process for UAS; and the UAS, due to its small size, does not have room to contain a fireproof placard or to display aircraft marks in a conventional size. However, as a condition to the grant of the exemption, AMK Services is willing to affix an aircraft

mark to one or more of the "arms" of the UAS. The size of the marking will be determined by the size of the "arm" being used and may be less than one inch in size.

3.1.6.3 91.103: Preflight Action

AMK Services requests an exemption from 14 C.F.R. 91.103. This regulation requires each PIC to take certain actions before flight to insure the safety of flight. As FAA approved rotorcraft flight manuals will not be provided for the UAS, an exemption is needed. The PIC will take all actions following the DJI preflight inspection including reviewing weather, flight battery requirements, landing and takeoff distances and aircraft performance data before initiation of flight.

3.1.6.4 91.105: Flight Crewmembers at Stations

AMK Services requests an exemption from 14 C.F.R. 91.105. AMK Services requests an exemption from 14 C.F.R. 91.105 since this part is not applicable due to the UAS carrying no flight crewmembers. However, to achieve an equivalent level of safety, AMK Services will not operate the aircraft unless the same PIC is at the controls at all times.

3.1.6.5 91.109: Flight Instruction; Simulated Instrument Flight and Certain Tests

AMK Services requests an exemption from 14 C.F.R. 91.109. Section 91.109 provides that no 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. UAS and remotely piloted aircraft, by their design, do not have fully functional dual controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via radio communications. The FAA has approved exemptions for flight training without fully functional dual controls for a number of aircraft and for flight instruction in experimental aircraft. The equivalent level of safety is provided because the UAS will not carry pilots or passengers, and relevant landowners will have prior notice of each flight.

3.1.6.6 91.113(b): Right-of-Way Rules

AMK Services requests an exemption from 14 C.F.R. 91.113(b) to the extent that it applies to overhead aircraft operating at or above 500 feet above ground level as the UAS will be operating no higher than 400 feet above ground level. This part provides:

- General. When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft. When a rule of this section gives another aircraft the right-of-way, the pilot shall give way to that aircraft and may not pass over, under, or ahead of it unless well clear.

For example, if another aircraft is operating overhead at 10,000 feet above ground level, there is no danger posed to that other aircraft if the UAS is operating beneath 400 feet above ground level. However, as a condition to the approval of exemption, AMK Services will operate its UAS to see and avoid and give way to other aircraft that should enter airspace at or below 400 feet above ground level.

3.1.6.7 91.119: Minimum Safe Altitudes

AMK Services requests an exemption from 14 C.F.R. 91.119. Section 91.119 establishes safe altitudes for operation of civil aircraft. Section 91.119(c) prevents flying an aircraft at an altitude of less than 500 feet or operating an aircraft closer than 500 feet to any person, vessel, vehicle, or

structure. As this exemption requests authority to operate at altitudes up to 400 feet, an exemption is needed to allow such operations. As set forth herein, the UAS will never operate at higher than 400 feet above ground level. It will however be operated in a remote area on private property with the landowner's consent.

The equivalent level of safety will be achieved given the size, weight, limited speed of the UAS as well as the remote location where it is operated. No flight will be taken without the permission of the landowner or local officials. Because of the advance notice given to the landowner, all affected individuals will be aware of the planned flight. Compared to flight operations with aircraft or rotorcraft weighing far more than the three pounds proposed herein and the lack of flammable fuel on the UAS, any risk associated with the UAS operations is far less than those presently presented with conventional aircraft operating at or below 500 feet above ground level for environmental monitoring. In addition, the low-altitude operations of the UAS will ensure separation between these small-UAS operations and the operations of conventional manned aircraft that must comply with Section 91.119.

3.1.6.8 91.121: Altimeter Settings

AMK Services requests an exemption from 14 C.F.R. 91.121. This regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set ". . .to the elevation of the departure airport or an appropriate altimeter setting available before departure." As the UAS may not have a barometric altimeter, but instead a GPS altitude read out, an exemption is requested. An equivalent level of safety will be achieved by the operator confirming the altitude of the launch site shown on the GPS altitude indicator before flight as well as the operator receiving live feedback information about the UAS, including the height of the UAS, its forward velocity, and compass heading. The operator will be able to observe and control the maximum height of the UAS. Additionally, the UAS will be operated within the line of sight of the PIC.

3.1.6.9 91.151(a): Fuel Requirements for Flight in Visual Flight Rules ("VFR") Conditions

AMK Services requests an exemption from 14 C.F.R. 91.151(a). Section 91.151(a) prohibits an individual from beginning "a flight in an airplane under visual flight rules 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:

- During the day, to fly after that for at least 30 minutes; or
- At night, to fly after that for at least 45 minutes."

The battery powering the UAS provides approximately 25 minutes of powered flight making it impossible to meet the 30 minute reserve requirement in 14 C.F.R. §91.151. Given the limitations on the UAS's proposed flight area and the location of its proposed operations within a predetermined and remote area, a lower minimum battery power requirement in daylight or night VFR conditions is reasonable. AMK Services believes that an equivalent level of safety can be achieved by limiting flights to 25 minutes or 25 percent of battery power, whichever happens first. This restriction would be more than adequate to return the UAS to its planned landing zone from anywhere in its limited and remote operating area.

3.1.6.10 91.203(a) & (b): Carrying Civil Aircraft Certification and Registration

AMK Services requests an exemption from 14 C.F.R. 91.203 (a) and(b). The regulation provides in pertinent part:

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

- An appropriate and current airworthiness certificate. . . .
- 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.

The UAS fully loaded weighs less than 3 pounds and is operated without an onboard pilot. As such, there is no ability or place to carry certification and registration documents or to display them on the UAS. An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the UAS will have immediate access to them, to the extent they are applicable to the UAS.

3.1.6.11 91.215: ATC Transponder and Altitude Reporting Equipment and Use

AMK Services requests an exemption from 14 C.F.R. 91.215. This section requires that installed Air Traffic Control ("ATC") transponder equipment must meet specific performance and environmental requirements, and aircraft must be equipped with an operable coded radar beacon transponder.

There are presently no known commercially available ATC transponders that meet the payload requirements of a small UAS and are available at reasonable cost. However, because the UAS used by AMK Services will not be flying into or near airports, and will fly no higher than 400 feet above ground level, there is very low risk of collision with any manned aircraft. In addition, because there will be no need to have contemporaneous communication with Air Traffic Control, due to the short distances, short flight times, and restricted altitude the UAS will operate within, AMK Services requests an exemption from this section. Additionally, the UAS is too small to contain ATC transponder equipment in any form that is known to be available commercially.

3.1.6.12 91.405 (a) & (d); 407 (a)(1); 409 (a)(2); 417(a) & (b): Maintenance Inspections

AMK Services requests an exemption from 14 C.F.R. 91.405 (a) and (d); 407 (a)(1), 409(a)(2), and 417 (a) and (b). These regulations require that an aircraft operator or owner "shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter . . .," and others shall inspect or maintain the aircraft in compliance with Part 43.

Given that these sections and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to AMK Services. Maintenance will be accomplished by the operator pursuant to the manufacturer's Phantom 2 User Manual and Phantom Pilot Training Guide. An equivalent level of safety will be achieved because these small UAS are very limited in size and will carry a small camera and operate only in remote and restricted areas for limited periods of time. If mechanical issues arise, the UAS can land immediately and will be operating from no higher than 400 feet above ground level. The operator will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed. Moreover, the operator is the person most familiar with the UAS and best suited to maintain the UAS in an airworthy condition to provide the equivalent level of safety.

3.1.7 Summary for the Federal Register

The following summary is provided for publication in the Federal Register in accord with 14 C.F.R. Part 11:

AMK Services requests exemptions from the following rules:

14 C.F.R. 21, Subpart H; 14 C.F.R. § 43.7; 14 C.F.R. § 43.11; 14 C.F.R. § 45.21; 14 C.F.R. § 45.23(b); 14 C.F.R. § 45.25; 14 C.F.R. § 45.27; 14 C.F.R. § 45.29; 14 C.F.R. § 47.3(b)(2); 14 C.F.R. § 61, Subpart E; 14 C.F.R. § 91.7(a); 14 C.F.R. § 91.9(b)(2); 14 C.F.R. § 91.9(c); 14 C.F.R. § 91.103; 14 C.F.R. § 91.105; 14 C.F.R. § 91.109; 14 C.F.R. § 91.113(b); 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. § 91.151(a); 14 C.F.R. § 91.203; 14 C.F.R. § 91.215; 14 C.F.R. § 91.405(a) and (d); 14 C.F.R. § 91.407(a)(1); 14 C.F.R. § 91.409(a)(2); 14 C.F.R. § 417(a) and (b)

To operate commercially a small unmanned aircraft vehicle (three pounds or less) to monitor, map, aerially photograph, survey and perform usual inspections by air of Communications Towers, Pipelines and other structures maintained and monitored by AMK Services.

Allowing small UAS to be used for monitoring and inspection purposes enhances safety by eliminating risks associated with conventional surveillance operations, which traditionally use larger manned aircraft and must operate at low altitudes, weigh thousands of pounds, and carry large amounts of fuel. Approval of the Exemptions, in contrast, would allow a battery operated small UAS weighing less than three pounds and no human passengers to complete the same job with virtually no risk. Under these conditions, the Phantom will provide an equivalent, if not higher, level of safety in the environmental surveillance field, which supports the grant of this Request and Application for Exemptions.

4. Privacy

All flights will occur over private or controlled access property with the landowner's prior consent and knowledge. Because overflight areas will be remote and rural, there is little to no chance that there will be inhabited houses in the visual area or other people who have not consented to being in close proximity with the Phantom. No attempt will be made to identify any individuals filmed during the flights except in cases where those persons are conducting unauthorized activities, are trespassing upon the AMK Services conservation easement lands, or are damaging any towers or resources under the management responsibility of AMK Services, or interfering with any of AMK Services' inspection or monitoring operations.

5. 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 – provide more than adequate justification for the grant of the requested Exemptions allowing AMK Services to use the Phantom for and during the management, research, and educational operations of AMK Services.

6. Exhibits Enclosed

6.1 Exhibit A - DJI – Phantom 2 User Training Guide

6.2 Exhibit B - DJI – Phantom 2 User Manual

6.3 Exhibit C - DJI-Phantom 2 Release Noted Dated Feb 2015

6.4 Exhibit D - Training Course Materials from ***Unmanned Experts*** Training Facility

6.5 Exhibit E - License and Pilot Information for Robert Bailey. Pilot for AMK Services