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

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

July 21, 2015

Exemption No. 12106
Regulatory Docket No. FAA-2015-0789

Mr. Michael E. Sievers
Hunton & Williams LLP
Riverfront Plaza, East Tower
951 East Byrd Street
Richmond, VA 23219-4074

Dear Mr. Sievers:

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 dated March 20, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Duke Energy Business Services, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct monitoring, inspections, and damage assessments.

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.

Airworthiness Certification

The UAS's proposed by the petitioner are the following:

DJI Inspire
DJI S1000
3DRobotics X8+
AeroVironment Shrike
Aerovironment Puma
UAV Solutions Phoenix 60
Lockheed Martin Indago
SenseFly eBee
SenseFly eXom
Draganflyer X4ES
Draganflyer X6
Draganflyer Guardian
Aeyron Skyranger
Aerialtronics Zenith ATX8
Blade 350 QX3

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 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 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, Duke Energy Business 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, Duke Energy Business 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 Inspire, DJI S1000, 3DRobotics X8, AeroVironment Shrike, Aerovironment Puma, UAV Solutions Phoenix 60, Lockheed Martin Indago, SenseFly eBee, SenseFly eXom, Draganflyer X4ES, Draganflyer X6, Draganflyer Guardian, Aeyron Skyranger, Aerialtronics Zenith ATX8, Blade 350 QX3 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 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 July 31, 2017, unless sooner superseded or rescinded.

Sincerely,

John S. Duncan
Director, Flight Standards Service

Enclosure

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March 20, 2015

FILE NO: 34085.000112

VIA ELECTRONIC SUBMISSION
AND FEDERAL EXPRESS

U.S. Department of Transportation, Docket Operations
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Re: Petition for Exemption Under § 333 of the FAA Modernization and Reform Act and Part 11 of the Federal Aviation Regulations

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("FMRA"), 49 U.S.C. § 44701, and 14 C.F.R. Part 11, Duke Energy Business Services, LLC ("DEBS" or "Petitioner"), a subsidiary of Duke Energy Corporation, a Delaware corporation ("Duke Energy"), hereby petitions for exemption in order to operate certain small unmanned aircraft systems ("sUAS")[1] as described in this petition. Duke Energy desires to operate sUAS in connection with the construction, operation, repair and maintenance of utility infrastructure, including monitoring, inspections, and damage assessments of transmission and distribution lines, vegetation, coal ash ponds, boilers, stacks, absorbers, and solar arrays, all of which are presently conducted by manned aerial or ground-based methods. Duke Energy anticipates that the use of sUAS offers a means to conduct these operations in a safer, faster, and more cost effective manner.

Consistent with the safety-conscious and deliberative ethos of Duke Energy and each of its affiliates and subsidiaries (collectively, "Duke"), Petitioner proposes to conduct all sUAS operations contemplated by this petition within the boundaries of Duke owned or controlled properties ("Duke Properties"). The sUAS operations also will be conducted by licensed and

[1] For the purposes of this petition, "sUAS" shall be used to specifically refer to "small unmanned aircraft systems," and "UAS" shall be used to refer to the broader category of "unmanned aircraft systems," which includes but is not limited to sUAS.

trained pilots and in strict accordance with comprehensive safety and security conditions, as more fully described in this petition.

As described further below, the sUAS operations addressed by this petition qualify for exemption under Section 333 of the FMRA, and the proposed limitations and conditions on sUAS operations set forth herein will ensure a level of safety at least as great as that which would result from compliance with the specific Federal Aviation Regulations from which exemption is sought. Accordingly, granting this petition will further the objective of safely integrating unmanned aircraft systems into the national airspace, as mandated by the FMRA.

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I. Identity and Description of Petitioner and Petitioner Affiliates

A. Name and Address of Petitioner

The name and mailing address of the Petitioner are:

Duke Energy Business Services, LLC
Attention: Jacob Velky
550 South Tryon Street
DEC 15A
Charlotte, North Carolina 28202
Tel: (704) 382-2115

All communications in regard to this petition should be sent both to the Petitioner contact named immediately above and to the undersigned, Petitioner's outside counsel, at the address set forth in the letterhead of this petition.

B. Duke Energy Corporation and its Affiliates and Subsidiaries

Duke Energy Corporation, through its various affiliates and subsidiaries, is the owner and/or operator of numerous properties and rights-of-way on which are located power generation, transmission, distribution and/or related facilities. Collectively, the service area of the Duke Energy Corporation family of companies covers 95,000 square miles and its regulated business unit serves 7.3 million retail electric customers, representing a population of approximately 23 million people in North Carolina, South Carolina, Indiana, Ohio, Kentucky and Florida.

C. Duke Energy Business Services, LLC

Duke Energy Business Services, LLC is a management services company in the Duke Energy Corporation family of companies and provides management services to all regulated utilities of Duke Energy Corporation. In addition to providing such services as Insurance and Information Technology to the Duke Energy Corporation regulated utilities, Duke Energy Business Services, LLC is also home to the corporate aviation department.

The Duke Energy corporate aviation department has been in operation since 1953 with no incidents or accidents. It currently operates nine aircraft with a staff of 37 people. The aviation department is a member of the National Business Aircraft Association (NBAA) and

is International Standard - Business Aircraft Operations (IS-BAO) registered through the International Business Aircraft Council (IBAC). As a part of this highly regarded industry standard, the department has a robust Safety Management System (SMS) that identifies and reduces flight risks. Any sUAS used for operations covered by this petition will undergo a thorough evaluation and will become a fully functioning asset within the Duke Energy aviation department.

II. Statutory and Regulatory Authority to Grant Petition for Exemption

A. Section 333 of the FAA Modernization and Reform Act of 2012

Section 333(a) of the FMRA provides that "the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace before completion of the plan and rulemaking required by section 332 of this Act[,]"[2] As part of that assessment, the Secretary is directed to determine "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," as well as whether an airworthiness certification is required for any such unmanned aircraft systems.[3] Finally, if the Secretary determines that certain unmanned aircraft system may operate safely in the national airspace, Section 333(c) further mandates that the Secretary "shall establish requirements for the safe operation of such aircraft systems."[4] Accordingly, the Secretary is *required* by law to make an initial determination about the potential for safe UAS operations and if the Secretary's determination is in the affirmative, then the Secretary is further *required* by law to establish the parameters for such safe UAS operations. As recognized by the FAA, Section 333 thus provides the Secretary, acting through the FAA, "flexibility for authorizing safe civil operations [of certain unmanned aircraft systems] in the NAS" on a case-by-case basis.[5]

B. 49 U.S.C. §§ 40109 and 44701

The FAA Administrator is authorized by several statutory provisions to issue exemptions in appropriate circumstances from the regulations prescribed in otherwise carrying out the

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[2] FMRA § 333(a).
[3] FMRA § 333(b),
[4] FMRA § 333(c).
[5] *See* FAA Home – Unmanned Aircraft Systems – Key Initiatives – Section 333; http://www.faa.gov/uas/legislative_programs/section_333/ (last visited Dec. 8, 2014).

requirements of applicable aviation law. For example, Section 40109(b) provides that the "Administrator...may grant an exemption from a regulation prescribed in carrying out sections 40103(b)(1) and (2), 40119, 44901, 44903, 44906, and 44935-44937 of this title *when the Administrator decides the exemption is in the public interest.*"[6] Similarly, Section 44701(f) states that the Administrator "may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any of sections 44702-44716 of this title *if the Administrator finds the exemption is in the public interest.*"[7]

C. 14 C.F.R. Part 11

Pursuant to existing FAA regulations, a party may seek relief from current regulations set forth in Title 14 of the Code of Federal Regulations by submitting a petition for exemption to the FAA.[8] The required contents of such a petition for exemption are set forth in 14 C.F.R. § 11.81. Among other technical requirements, the petition must contain (i) the specific section(s) of 14 C.F.R. from which exemption is being sought, (ii) the extent of and reason why relief is sought, (iii) an explanation of how granting the exemption would benefit the public as a whole (i.e., why it is in the public interest), and (iv) an explanation of how an equivalent or greater level of safety will be achieved even with the grant of the exemption (i.e., how the exemption would not adversely affect safety).[9]

III. Petitioner's Proposed Aircraft and Operations

All sUAS operations proposed under this petition will be conducted under the auspices of the Duke Energy aviation department in accordance with the Supplement to the Duke Energy Flight Operations Manual for Small Unmanned Aircraft (such Supplement, the "Duke sUAS FOM," and such Flight Operations Manual, the "Duke FOM"),[10] and the following specific terms, conditions and requirements.

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[6] 49 U.S.C. § 40109(b) (emphasis added).
[7] 49 U.S.C. § 44701(f) (emphasis added).
[8] 14 C.F.R. § 11.61.
[9] 14 C.F.R. § 11.81.
[10] Confidential copies of these documents are being submitted in support of this petition as "Confidential Exhibit 1" and "Confidential Exhibit 2," respectively.

A. The Unmanned Aircraft System

1. sUAS Approved by the FAA

Petitioner seeks authorization in this petition to operate any sUAS that has been approved, or is hereafter approved, for flight operations under an exemption granted by the FAA pursuant to Section 333 of the FMRA (an "Approved sUAS"). Petitioner will cause the operation of any Approved sUAS to be conducted in accordance with the restrictions, conditions, and Craft-Specific FAR Exemptions (as defined below) set forth in the grant of exemption authorizing the use of such Approved sUAS (such prior or subsequent exemption grant , an "sUAS Approval"), unless there is a conflict between such restrictions, conditions, and exemptions and this petition, in which case the restrictions, conditions, and exemptions of this petition will prevail.

2. Additional Operational and Design Details

Operational and design details for each Approved sUAS are as set forth in the owner's manual and specification materials provided by the manufacturer of such Approved sUAS.

3. System Inspection and Maintenance Information

Pre-flight, post-flight, and scheduled maintenance information is as set forth in the inspection and maintenance materials provided from time to time by the manufacturer of such Approved sUAS and/or such materials as provided to the FAA in connection with such sUAS Approval.

B. Pilot-in-Command and Observer Duties and Qualifications

The Pilot-in-Command (PIC) will hold (at a minimum) a private's pilot's license and a third class medical certificate, and be responsible for pre and post flight inspections, logging of flight data, the overall safety of the flight operation, and the operation of the sUAS in accordance with the conditions of the exemption granted by the FAA pursuant to this petition. The visual observer (VO) will remain within speaking distance of the PIC and visually monitor the sUAS at all times.

C. Operations Parameters

1. Site Locations

This petition covers all properties owned or controlled by Duke, including but not limited to properties for which Duke owns utility easements, rights of way and/or maintains encroachment agreements.

2. Flight Conditions

a) General Requirements

Petitioner will obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) in order to coordinate its efforts through Air Traffic Control (ATC). In addition, Petitioner will request a Notice to Airman (NOTAM) no more than 72 hours in advance, but not less than 48 hours prior to any operation, and flights will not be conducted within 5 nautical miles of an airport reference point as denoted on a current FAA-published aeronautical chart unless a letter of agreement has been obtained from the airport's management or it is concluded that such airport is no longer operational.

b) Pre-Flight Routines

Pre-flight inspections and procedures will be conducted in accordance with each Approved sUAS's operator's manual.

c) Flight Operations and Limitations

The selected aircraft will be flown within visual line of sight (VLOS) in visual metrological conditions (VMC) and Petitioner will not permit the aircraft to be operated less than 500 feet below or 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC. In addition, the aircraft will not be flown over 400 feet above ground level (AGL) and Petitioner will comply with the OEM's policies, procedures and limitations listed in the relevant operator's manual. If the PIC encounters unpredicted obstacles or emergencies the flight will be aborted in accordance with the operator's manual and the aircraft will not be flown within 500 feet of nonparticipating persons, vessels, vehicles, or structures. Operations within 500 feet of unoccupied vessels, vehicles or structures will only be conducted if permission has been granted by the owner/controller.

d) Post-Flight Routines

Post-flight inspections and procedures will be conducted in accordance with the manufacturer's operating manual.

IV. Section 333 Determination and Need for Relief from 14 CFR Part 21

Based on the design and capabilities of Approved sUAS, and the operational limitations specified in this petition, the sUAS operations Petitioner proposes to conduct pursuant to this petition will not pose a threat to users of the NAS, the general public, or to national security. By definition, each Approved sUAS will be one for which the Secretary has determined, pursuant to authority granted under Section 333, that a certification of air worthiness under 14 CFR Part 21, or any associated noise certification under 14 CFR Part 36, is not required.

V. Requested Exemptions from Federal Aviation Regulations

Petitioner requests an exemption from certain provisions of the Federal Aviation Regulations set out at Title 14 of the Code of Federal Regulations ("FARs") for the operation of Approved sUAS in connection with the construction, operation, repair and maintenance of utility infrastructure, including, inspections of transmission and distribution lines, vegetation, coal ash ponds, boilers, stacks, absorbers, and solar arrays, all of which are presently conducted by manned aerial or ground-based methods. Petitioner hereby requests exemption from all applicable FARs that are based on or necessitated by the design and physical characteristics or the capabilities of a particular Approved sUAS (such FAR exemptions, collectively, the "Craft-Specific FARs") to the same extent that the FAA has granted exemption from such Craft-Specific FARs in any other Grant of Exemption under Section 333 with respect to such particular Approved sUAS. These Craft-Specific FARs include: Parts 21(H) and 36, and Sections 45.23; 91.9(c); 91.7(a); 91.9(b)(2); 91.109; 91.405(a) & (d); 91.407(a)(1); 91.409(a)(1) and (2); and 91.417(a) & (b); of Title 14, Code of Federal Regulations. The rationale for the requested exemption from each applicable Craft-Specific FAR is incorporated by reference from the Grant of Exemption and associated petition in which each particular sUAS has been authorized for operation.

Petitioner hereby also requests exemption from each of the following FARs, which are intended to include all such FARs that are not based on or necessitated by the design and physical characteristics or the capabilities of a particular sUAS (the "Non-Craft-Specific FARs"): All applicable provisions of Parts 47, and 49; and Sections; 61.3(d); 61.31(d); 61.113(a) & (b); 61.133(a); 91.105; 91.119; 91.121; 91.151(a); 91.203(a) & (b); and

91.103(b)(2) of Title 14, Code of Federal Regulations. Petitioner addresses each of the Non-Craft-Specific FARs below and provides a basis for the exemption.

A. 14 C.F.R. Part 47 (Aircraft Registration) and Part 49 (Recordation of Aircraft Title and Security Documents)

14 C.F.R. Part 47 sets forth various aircraft registration requirements regarding ownership and identification of the aircraft and Part 49 covers recordation of title and conveyances.

Petitioner does not plan to acquire a particular sUAS until after approval for the operation has been obtained under this petition, but Petitioner will comply with all registration requirements prior to initiation of operations.

B. 14 C.F.R. Section 61.3 (d) (Requirement of Certificate for Flight Instruction)

This regulation states that only those instructors with a flight instructor certificate from the FAA may qualify other pilots for solo flight. However, the additional skills required to obtain a flight instructor certificate for standard aircraft are generally not applicable to training unmanned pilots in the operation of sUAS. The training necessary to master the operation of an Approved sUAS need not be as extensive as the training for manned aircraft due to the automated features of such aircraft, the built-in failsafe devices, and the lack of a crew or heavy payload. Prospective sUAS pilots will already have sufficient aeronautical knowledge to operate the aircraft because of their private pilot's license and instructors will be well trained in the particular Approved sUAS. Therefore, an exemption to this regulation is appropriate because Petitioner's pilots will have a level of training with respect to such Approved sUAS that is equivalent to the training required by those who operate manned aircraft.

C. 14 C.F.R. Section 61.31 (d) (Aircraft category, class, and type ratings)

This section requires the pilot in command of an aircraft to hold the appropriate rating for the aircraft to be flown or receive an endorsement for solo flight in the aircraft by an authorized instructor. Pilots are therefore limited to the types of aircraft for which they possess a license. However, sUAS are unique forms of aircraft and the FAA does not issue licenses specifically for these devices so this section would not apply to the proposed operations. Exempting Petitioner's operations from this section would not adversely impact safety because the pilots operating under this proposal would receive special training on the relevant Approved sUAS

and all flights would take place within Duke Properties. An exemption from this provision is appropriate based on the foregoing information because an equivalent level of safety can be achieved.

D. 14 C.F.R. Section 61.113 (a) & (b); 14 C.F.R. Section 61.133 (a) (Private Pilot Restrictions on Compensation)

These regulations prohibit private pilots from operating an aircraft for commercial purposes except under certain limited circumstances. In order to pilot an aircraft for compensation the operator must possess a commercial pilot certificate and meet the requirements set forth in Section 61.133. The Petitioner seeks an exemption from these regulations so that an operator with a private pilot's license can conduct operations with the Approved sUAS.

sUAS are a unique type of aircraft and the additional training required for a commercial pilot certificate would not necessarily be relevant to the operation of such devices. The commercial designation is applicable to manned aircraft, but the Approved sUAS do not carry personnel or the property of a third party. A specialized training program conducted in accordance with any manufacturer-recommended training guidelines would provide the additional knowledge and experience required to safely pilot the Approved sUAS. In addition, a visual observer will be present during all flight operations. Petitioner will assure that the operator of the Approved sUAS will have completed sufficient training to ensure the safe operation of the aircraft under the proposed conditions. Petitioner anticipates that such a training program would involve: (a) at least 25 hours of total flight time as a UAS rotorcraft pilot with at least 10 hours of multi-rotor time, (b) at least 5 hours of flight time with the particular Approved sUAS, and (c) a currency requirement of 3 take-offs and landings in the preceding 90 days. Completion of a specialized training program in operation of this sUAS will ensure that an equivalent level of safety is obtained. Moreover, all flights will be pre-planned and aided by the Approved sUAS autopilot features. The FAA has granted similar exemptions to this regulation under Exemptions 11109, 11110, and 11062.

E. 14 C.F.R. Section 91.105 (Crewmembers at Stations; Seatbelts)

This regulation requires flight crewmembers to remain at their stations with fastened seatbelts during takeoff and landing. In Exemption No. 11185 the FAA determined that relief from this regulation was not necessary because it did not apply to sUAS operations where crewmembers remained on the ground. The FAA reasoned that the intent of the regulation was to ensure that crewmembers were at the station where their duties could be performed. However, since the crewmembers in the previous Exemption were required to be at their

assigned stations while operating the aircraft and the stations were not equipped with safety belts, the regulation did not apply.

Similarly, the PIC and VO under this petition will remain at their stations during flight operations and the Approved sUAS will not have any crewmembers aboard the aircraft during any phase of the operation. The stations will not be equipped with safety belts or shoulder harnesses. Therefore, this regulation does not apply to the Petitioner's operations. Should this regulation be found to apply, an exemption is appropriate for the above mentioned reasons.

F. 14 C.F.R. Section 91.119 (Minimum Safe Altitudes)

This regulation sets the minimum safe altitudes for aircraft operation. Generally, aircraft may not be operated lower than 500 feet above the ground, but over open water and sparsely populated areas it is permissible to fly below this threshold. Even so, aircraft are still not permitted to be operated within 500 feet of any person, vessel, vehicle, or structure.

All of the Approved sUAS flights pursuant to this petition will be conducted under 400 feet AGL and within the boundaries of Duke Properties. In addition, Petitioner's personnel may be within 500 feet of the operations. Due to these circumstances, an exemption from the 500 feet restriction is necessary.

The Petitioner is able to achieve an equivalent level of safety because of the small size, light weight, lack of combustible fuels, and automated failsafe features of each Approved sUAS. In addition, all flights will be conducted within the boundaries of Duke Properties. The selected Approved sUAS will not be flown within 500 feet of any structures or vehicles unless permission has been obtained from the owner of such structures or vehicles. Similarly, each Approved sUAS will only be flown within 500 feet of personnel if they have consented to the operation and such proximity is operationally necessary. These operations will be safer than equivalent inspections carried out by significantly heavier manned aircraft powered by combustible fuels. The low altitude operations conducted by each Approved sUAS will also make it less likely to encounter other conventional aircraft. The FAA has granted similar exemptions to this regulation, especially in regard to structures and vehicles, under Exemptions 11109, 11110, 11111, and 11112.

G. 14 C.F.R. Section 91.121 (Altimeter Settings)

This regulation requires the operator of an aircraft not equipped with a radio to maintain a cruising altitude by referencing an altimeter that is set to the elevation of the departure airport or an appropriate altimeter setting. An equivalent level of safety can be achieved by utilizing an onboard GPS receiver to determine its current position and navigate accordingly. Prior to flight, the operator will obtain an altitude initiation point and confirm its accuracy. The Approved sUAS pilot can also use the constantly updated GPS information to determine the aircraft's altitude and view this information on the handheld tablet. The FAA has granted a similar exemption to this regulation under Exemption 11109.

H. 14 C.F.R. Section 91.151 (a) (Fuel Requirements)

This regulation requires that an aircraft carry enough fuel to reach the first point of its intended landing and: (1) during the day have the ability to fly for at least 30 more minutes; or (2) at night have the ability to fly for at least 45 more minutes. An exemption from this regulation is necessary for aircraft that would not be able to maintain the required 30 minute reserve flight time.

An equivalent level of safety can be achieved by limiting flights to 20% of remaining battery power. This restriction, in conjunction with the Approved sUAS's battery sensors and automatic landing features, provide a high degree of safety considering that the aircraft will only be operated within the boundaries of Duke Properties. In addition, the small size and weight of the Approved sUAS allows for a much safer emergency landing than traditional aircraft should the power supply become depleted. The selected aircraft will be flown within VLOS and the PIC will have up to date knowledge of the battery life of the Approved sUAS. The FAA has granted similar exemptions in the past under Exemptions 2689F, 5745, 10673, 10808, 11109, 11110, and 11112.

I. 14 C.F.R. Section 91.203 (a) & (b) (Display of Certificates)

This regulation requires that civil aircraft display airworthiness and registration certificates at the cabin or cockpit entrance. Based on the FAA Memorandum "Interpretation regarding whether certain required documents may be kept at an UA's control station," dated August 8, 2014, the Petitioner is not required to seek relief from this regulation. However, if this regulation is found to apply, Petitioner expects that it will not be possible to comply because the Approved sUAS are unmanned aircraft and have no cockpit or cabin. Given the small size, weight, and loadbearing capabilities of the Approved sUAS, it is not practical to display

these certificates in any other part of the aircraft. Such documents can be kept with the pilot where they can be immediately accessed. An exemption, if required, is therefore appropriate under these circumstances. The FAA has reached a similar result regarding this regulation under Exemptions 11109, 11111, 11112, and 11114.

J. 14 C.F.R. Section 91.103 (b)(2) (Preflight Action)

This regulation requires the PIC to become familiar with certain information prior to beginning a flight, including information relating to the aircraft performance and environmental conditions. Several prior Exemptions have found that relief from this regulation was not necessary because the petitioners could comply with the requirements by reviewing weather data, checking battery life, and reviewing landings, takeoff distances, and aircraft performance. Exemptions where the FAA found that relief from this regulation was not necessary include 11153, 11109, 11150, and 11138.

Should the FAA find that this regulation applies, relief would be necessary since there is no approved flight manual for the Approved sUAS. An equivalent level of safety can be achieved because prior to every flight the operator will perform a visual inspection of key components, test all batteries, and keep a log of inspection and flight activities. In addition, weather data and site specific conditions will be reviewed by the operator, a visual observer will be present during all flight operations, and the aforementioned operational requirements will remain in effect.

VI. Public Interest

Petitioner submits that the exemptions requested by this petition are in the public interest because the sUAS operations contemplated by this petition will not pose a threat to users of the NAS, the general public, or to national security, and have the potential to provide significant benefits to the employees and customers of Petitioner. Specifically, these sUAS operations will allow employees to inspect critical infrastructure without the dangers of ascending towers or working near high voltage power lines. The public interest is furthered by reducing the danger to the personnel who service utility lines and ensure the safe transmission of electrical power to thousands of customers. In addition, current inspections are often conducted with helicopters that could weigh thousands of pounds and carry many gallons of combustible fuel. sUAS are nearly silent in flight and therefore are less likely to disturb neighboring property owners. In the event of an sUAS crash, no combustible liquid fuel would be onboard and the damage caused would be much less than for a manned aircraft given the light weight and small size of the sUAS. Finally, sUAS operations provide a cost

effective method of inspecting the critical components of the nation's electrical infrastructure, creating a savings that will be passed on to customers throughout the distribution area.

VII. Privacy

All flights will occur over Duke Properties. Any images taken will be of individuals who have consented to be filmed or otherwise have agreed to be in the area where aerial photography will take place. In addition, all flights will be monitored by the operator and a visual observer to ensure that the sUAS does not deviate from the proposed flight plan.

VIII. Federal Register Notice

Pursuant to 14 CFR Part 11, Petitioner provides the following notice in the event that the FAA determines publication is required:

Duke Energy Business Services, LLC, ("DEBS") a subsidiary of Duke Energy Corporation, has filed a petition with the FAA seeking an exemption from the following rules in connection with the operation of a small unmanned aircraft system (sUAS):

14 CFR Part 21 (H); 14 CFR Part 36; 14 CFR Section 45.23; 14 CFR Section 91.9 (c); 14 CFR Part 47; 14 CFR Part 49; 14 CFR Section 61.3 (d); 14 CFR Section 61.31 (d); 14 CFR Section 61.113 (a) & (b); 14 CFR Section 61.133 (a); 14 CFR Section 91.7 (a); 14 CFR Section 91.9 (b)(2); 14 CFR Section 91.109; 14 CFR Section 91.119; 14 CFR Section 91.121; 14 CFR Section 91.151 (a); 14 CFR Section 91.203 (a) & (b); 14 CFR Section 91.405 (a) & (d); 14 CFR Section 91.407 (a)(1); 14 CFR Section 91.409 (a)(1) and (2); 14 CFR Section 91.417 (a) & (b).

Duke's proposed sUAS operations will take place within the boundaries of Duke owned or controlled properties, under 400 feet above ground level, and for a period of time such that the battery life of the aircraft will not fall below 20%. Duke proposes to operate sUAS in connection with the construction, operation, repair and maintenance of utility infrastructure, including, inspections of transmission and distribution lines, vegetation, coal ash ponds, boilers, stacks, absorbers, and solar arrays. The use of sUAS in lieu of climbing operations or traditional aircraft will enhance the safety of utility workers and reduce the risk to lives and property. The proposed platforms are any of those heretofore or hereafter approved by the FAA pursuant to a Grant of Exemption under Section 333 the FAA Modernization and Reform Act of 2012. The conditions and safety standards set forth in the petition will achieve

a level of safety that is equivalent to, or higher than, the level of safety obtained by traditional aircraft under the above-mentioned regulations.

IX. Summary

Given the conditions and standards proposed above, and the proven track record of Petitioner's aviation department, Petitioner's proposed operations will not create a hazard to other aircraft in the NAS or present a threat to national security. The Approved sUAS are or will be those that have been evaluated and approved by the FAA under a Grant of Exemption. In order to achieve a level of safety equivalent to that of traditional aircraft, Petitioner has proposed conditions such as line of sight control, the presence of a visual observer, private property restrictions, reserve power levels, training programs, and notice to interested parties in the surrounding area. The requested exemptions are appropriate because sUAS provide many safety advantages over traditional aircraft and any additional risks posed by such systems have been sufficiently mitigated.

X. Prayer for Relief

Based on the foregoing information, Petitioner hereby requests an exemption from the above-listed regulations and such further relief that the FAA determines appropriate for the proposed operations.

Respectfully submitted,

Michael E. Sievers

Attachments
cc: Clayton Morgan, Esq., Duke Energy
Mr. James Williams, FAA
Mr. Robert Pappas, FAA

HUNTON&
WILLIAMS

Confidential Exhibit 1

Submitted Confidentially Under Separate Cover

Supplement to the Duke Energy
Flight Operations Manual for Small Unmanned Aircraft

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Confidential Exhibit 2

Submitted Confidentially Under Separate Cover

Duke Flight Operations Manual