



**PARTNERSHIP FOR SAFETY PLAN
(PSP #: 2016-PSP-0921)**

**A
MEMORANDUM OF UNDERSTANDING**

Between

**Federal Aviation Administration
and
Xcel Energy Services Inc.**

December 15, 2016

REVISION HISTORY		
Rev	Description of Change	Effective Date
0	Original	TBD

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ARTICLE I. PARTIES

The parties to this Partnership for Safety Plan Memorandum of Understanding (PSP) are the Federal Aviation Administration (FAA) and Xcel Energy Services Inc., a Delaware corporation ("Xcel Energy"). Xcel Energy is the shared corporate services affiliate of its affiliated operating utilities Northern States Power Company, a Minnesota corporation d/b/a Xcel Energy, Northern States Power Company, a Wisconsin corporation d/b/a Xcel Energy, Public Service Company of Colorado, a Colorado corporation d/b/a Xcel Energy and Southwestern Public Service Company, a New Mexico corporation d/b/a Xcel Energy (collectively "operating affiliates").

ARTICLE II. PURPOSE, VISION AND EXPECTED OUTCOMES

1. Purpose

The purpose of this PSP is to establish a working relationship between the FAA and Xcel Energy that will facilitate the use of Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS) to support the safe and reliable operation of the national electrical grid. The PSP establishes the principles and procedures for early identification of critical issues and early planning so that future projects can be completed in a timely and efficient fashion. It forms the foundation from which to share mutually beneficial data, build mutual trust, leadership, and teamwork, and outlines the best industry and FAA practices to reach these goals. Finally, this PSP serves as a vehicle for a coordinated FAA approach involving a single point-of-entry for associated projects, planning, sequencing, integrated decision-making, and documentation of activities, issues and decisions.

2. Vision

The Vision of this PSP is that the FAA and Xcel Energy will work together to:

- Document the plans for Xcel Energy and the FAA to work together to develop, evaluate, and implement the operational measures necessary to facilitate the safe and routine beyond visual line-of-sight (BVLOS) operations of UAS to monitor, inspect and sustain the electrical grid,
- Evaluate decision-making methodologies and the FAA level of project involvement, and
- Identify and mitigate the potential safety issues that would prevent efficient, consistent, and timely authorization of safe operations.

3. Expected Benefits

FAA:

- Identification of technologies, procedures, and processes required to authorize low risk BVLOS operations,
- Use of data and information to inform guidance, policies, and rulemaking activities related to BVLOS operations,

- Evaluation of Risk Based Decision Making methods to facilitate the safe integration of UAS into the National Airspace System,
- Facilitate the implementation of Federal statutory requirements,
- Understand the derived cost benefits for this type of operation,
- Identify the minimum remote pilot-in-command requirements necessary to safely conduct the operation, and
- Identify a scalable sense and avoid strategy that ensures safe integration into the NAS.

Xcel Energy:

- Reduce risks associated with maintaining electric utility infrastructure,
- Enhance electric utility reliability and compliance, and
- Reduce operational costs and increase operating efficiency.

Public:

- Safer operations compared to current practices,
- Reduced fatalities and injury rates, and
- Enhancement of electric utility reliability.

ARTICLE III. RESPONSIBILITIES and OBLIGATIONS

1. FAA Obligations

- Review and act upon any application for experimental airworthiness certification and type certification directly associated with this PSP in a timely manner.
- Review and act upon any request for operational approval under part 91, petition for exemption, waiver request, COA request, and review conditions and limitations related to UAS operations by Xcel Energy directly associated with this PSP in a timely manner.
- Collaborate on the evaluation of critical issues on the design, manufacturing, operational, and/or airspace integration.
- Adhere to Department of Transportation (DOT) UAS privacy policy.¹

2. Xcel Energy Obligations

- Any associated equipment and expenses are the responsibility of Xcel Energy.
- Adhere to DOT UAS privacy policy.
- Follow all FAA regulations and guidance, with the understanding UAS integration is a new and novel undertaking for the FAA, so traditional timelines for certification and operational approval may not be applicable and may take more time than expected.
- Provide copies of the following items to FAA:
 - program plans
 - quarterly progress reports

¹ <https://www.transportation.gov/individuals/privacy/uas-privacy-policy>

- test plans
- test reports
- lessons learned, and
- data (per Appendix-C)
- Provide access to infrastructure, communications systems, and other system networks related to this PSP to the FAA

ARTICLE IV. USE OF NAME, ENDORSEMENT, AND PUBLICITY

1. Use of FAA Name Prohibited

Xcel Energy shall not use the name of the FAA on any product or service which is directly or indirectly related to either this PSP or any patent license or assignment which implements this PSP without the prior approval of the FAA.

2. No Endorsement by the FAA

By entering into this PSP, the FAA does not directly or indirectly endorse any product or service provided, or to be provided, by Xcel Energy, its successors, assignees, or licensees. Xcel Energy shall not in any way imply that this PSP is an endorsement by the FAA of any such product or service.

3. Publicity

Nothing in paragraphs 1 and 2 of this Article IV shall prevent Xcel Energy or the FAA from publicizing this agreement or activities taken pursuant to this agreement. Prior to any public announcements being released, Xcel Energy agrees to provide such announcements to the FAA for review.

ARTICLE V. PROGRAM ADMINISTRATION

1. General

Xcel Energy and the FAA agree to work per the principles and operating norms outlined in this PSP as well as any project plans that may be developed in conjunction with this PSP. Where applicable, parties will adhere to the DOT policy on ex-parte communications.

2. Corporate Planning

Xcel Energy and the FAA will conduct a kick-off-meeting to discuss program requirements and milestones within forty-five days from the effective date of this PSP. The outcomes of the kick-off meeting should be documented by Xcel Energy and provided to the FAA Project Manager within 5 business days. The documentation should include a listing of all key personnel, roles and responsibilities of the parties, work assignments delegated to Xcel Energy, project identification, and phase definition, etc.

Quarterly management program reviews conducted jointly by the FAA and Xcel Energy will touch broadly on areas that require special attention, e.g., Certificate of Waivers or Authorization (COA), Part 107 waivers, Section 333 exemptions, experimental certifications, special conditions, exemptions, equivalent safety findings, unique designs, new materials or processes, air traffic/production/operational aspects, and continued airworthiness, etc. These meetings will begin three months from the kick-off meeting. All meetings must include an agreed upon agenda and result in minutes that document attendees, discussions, actions, conclusions, etc. and must be submitted to the FAA Project Manager by the Xcel Energy Project Manager. Unless otherwise agreed, draft minutes and actions are to be circulated within 5 working days of the meeting, and final minutes are to be issued within 5 working days following agreement by the two Project Managers.

3. Communication and Coordination

All communication and coordination shall go through the Project Managers. This does not preclude any team members from communicating with any other member, but they need to ensure the Project Managers are informed. This will reduce the likelihood of miscommunication, and facilitate conflict resolution. Additionally, the two Project Managers will keep their respective stakeholders informed.

4. Risk-Based Decision Making

Xcel Energy will develop a process in order to identify hazards, assess, analyze, and control risk. The FAA and Xcel Energy will use a risk-based approach built on safety management principles to proactively address safety risks. Expressly, Xcel Energy will review safety data to identify risks and put in place mitigations to avoid potential accidents or incidents.

5. Transition Plan

The FAA will endeavor to assign all of Xcel Energy's projects to the same team of subject-matter experts. All documentation of each project will be stored and made available to any new team member.

6. Continuous Improvement

A. Issues Identification and Resolution

Xcel Energy will create a process to address issue identification and resolution with the FAA as early as possible. The Xcel Energy Project Manager will create and maintain a project issues tracking list, and will work through the issues with the FAA Project Manager.

B. Performance Measures

i. General

Effective communication between Xcel Energy and the FAA is critical to assure availability of resources, adequate planning, and flexibility for both the FAA and Xcel Energy. Effective project

management oversight, planning, communication, and documentation are essential. Priority must be placed on early identification and resolution of the following:

- Execution of project in accordance with the plan
- Establishment of approval basis and means of compliance
- Identification and tracking of significant issues and activities
- System and operational performance metrics are validated and satisfied

ii. Operating Norms

The PSP parties will work together to understand the program requirements and avoid changes that would adversely affect the mutually agreed upon program outcomes to the greatest extent possible. The parties are committed to facilitating the safe operation of UAS in a timely manner. Xcel Energy will follow all the applicable FAA processes depending on the different types of avenues to get access to the NAS.

iii. Phase Evaluation Checklists

The Phase Evaluation Checklists² are tools that can be used for project management during the appropriate phases. The Xcel Energy Project Manager will prepare a Phase Evaluation Checklist at the close of each phase of a project, and submit to the FAA Project Manager for inputs in order to improve the execution of the subsequent phases and programs.

ARTICLE VI. INTELLECTUAL PROPERTY, PROTECTION OF INFORMATION, AND FOIA

1. Intellectual Property Rights in Data

The Government retains Government Purpose Rights in all data developed under this Agreement.

"Data" means recorded information, regardless of form or method of recording, which includes but is not limited to, technical data, computer software, trade secrets, and mask works. The term does not include financial, administrative, cost, pricing or management information.

"Government Purpose Rights" means the rights to –

- (1) Use, modify, reproduce, release, perform, display, or disclose data within the government without restriction; and,
- (2) Release or disclose technical data outside the government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that data for government purposes.

²Appendix VII of the FAA and Industry Guide to Product Certification

"Government Purpose" means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive acquisition by or on behalf of the Government but do not include the rights to use, modify, reproduce, release, perform, display, or disclose data for commercial purposes or authorize others to do so.

2. Protection of Information

The parties agree that they shall take appropriate measures to protect proprietary, privileged, or otherwise confidential information that may come into their possession as a result of this PSP.

3. Effect of the Freedom of information Act (FOIA), 5 U.S.C. § 552

The FAA shall not disclose any trade secret or commercial or financial information that is privileged or confidential under the meaning of § 552(b)(4) of Title 5 of the United States Code.

ARTICLE VII. GENERAL PROVISIONS

1. Effective Date and Term, Changes, and Termination

A. Effective Date and Term

To be effective this PSP must be signed by all parties. The effective date of this PSP the date of the final signature. This PSP shall continue in effect for **24 months** or unless earlier terminated by the parties, as provided herein.

B. Changes or Modifications

Any changes and/or modifications to this PSP shall be in writing and signed by authorized representatives of Xcel Energy and FAA.

C. Termination

Either party may terminate this PSP at any time prior to its expiration date, with or without cause, and without incurring any liability or obligation to the terminated party by giving the other party at least thirty (30) days prior written notice of termination.

2. Type of Agreement under this PSP

This PSP is an "other transaction" Memorandum of Understanding. It is not intended to be, nor shall it be construed as a business partnership, corporation, or other business organization.

3. Legal Authority

The authority for this MOU is 49 U.S.C. 106 (f)(2)(A) and 106(l) and (m).

4. Project Manager

The term "Project Manager" means the person designated respectively by each party to this PSP who will be responsible for the scientific and technical conduct of the projects/programs.

FAA:

Name: Michele Cappelle
PSP Project Manager
Program and Data Management Branch
UAS Integration Office (AUS-410)
Federal Aviation Administration
Address: 470 L'Enfant Plaza, suite 7100
Washington, DC 20024
Telephone: (202) 267-1195
Email: michele.cappelle@faa.gov

Xcel Energy:

Name: Eileen Lockhart
PSP Project Manager
Xcel Energy Services Inc.
Address: 10001 W. Hampden Ave
Lakewood, CO 80227
Telephone: (303) 716-2058
Email: eileen.lockhart@xcelenergy.com

5. Title to Property

The FAA shall not develop, acquire, or pay for any capital equipment under this PSP. All the required capital equipment including UAS, associated ground equipment, airborne equipment, augmented assets of Xcel Energy (Field Area Network – FAN), etc. shall remain or vest in Xcel Energy.

6. Funding and Payment

No funds are obligated under this MOU. Each party shall bear the full cost it incurs in performing, managing, and administering its responsibilities under this MOU.

7. Order of Precedence

In the event of any inconsistency between the terms of the PSP, the inconsistency shall be resolved by giving preference in the following order (a) The PSP, (b) the attachments.

8. Construction of the Agreement

The parties understand and agree that this PSP does not confer any legal rights, duties or obligations on either party and is not subject to dispute in any forum. Neither party is

authorized or empowered to act on behalf of the other with regard to any matter, and neither party shall be bound by the acts or conduct of the other in connection with any activity under this PSP. This provision shall survive termination of this PSP.

9. Disputes

Where possible, disputes will be resolved by informal discussion between the parties. In the event the parties are unable to resolve a disagreement through good faith negotiations, the dispute will be resolved by FAA Director of UAS Integration Office.

10. Warranties, Insurance, and Limitation of Liability

A. Warranties

Neither the FAA nor Xcel Energy makes any express or implied warranty as to any matter arising under this MOU.

B. Insurance



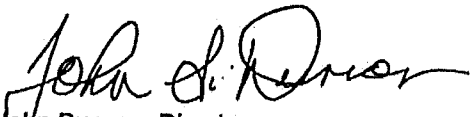

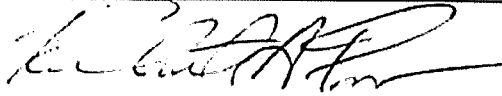
Xcel Energy shall arrange by insurance or otherwise for the full protection of Xcel Energy from and against all liability to third parties arising out of, or related to, its performance of this PSP. The FAA assumes no liability under this PSP for any losses arising out of any action or inaction by Xcel Energy, its employees, or contractors, or any third party acting on its behalf. Xcel Energy agrees to hold the United States harmless against any claim by third persons for injury, death or property damage arising out of or in connection with Xcel Energy's performance under this PSP.

C. Limitation of Liability

Both parties agree to waive claims for damages of any nature whatsoever pursued under this PSP. In no event shall either party be liable for claims for consequential, punitive, special and incidental damages, claims for lost profits, or other indirect damages. The U.S. Government shall only be liable for those tortious acts for which relief is available pursuant to the Federal Tort Claims Act, 298 U.S.C. § 2671 et seq.

ARTICLE VIII. SIGNATORIES

The FAA and Xcel Energy agree to the provisions of this PSP as indicated by the signatures of their duly authorized representatives.

 Kent Larson Executive VP, Xcel Energy Services Inc. Date:	 Earl Lawrence, Director UAS Integration Office Federal Aviation Administration Date:
	 John Duncan, Director Flight Standards Service Federal Aviation Administration Date:
	 Dorenda Baker, Director Aircraft Certification Service Federal Aviation Administration Date:
	 Robert Pappas, Manager Program and Data Management UAS Integration Office Federal Aviation Administration Date:

ARTICLE VI. APPENDICES

A – List of Abbreviations

AUS	FAA UAS Integration Office
BVLOS	Beyond visual line of sight
DOT	Department of Transportation
FAA	Federal Aviation Administration
PSP	Partnership for Safety Plan Memorandum of Understanding
SMS	Safety Management System
UAS	Unmanned Aircraft Systems

B – Deliverables (B1 – Quarterly Progress Report, and B2 – Final Report)
B1 – Quarterly Progress Report

QUARTERLY PROGRESS REPORT

PSP #: 2016-PSP-0921 Quarterly Report # _____ Date: _____

Synopsis:

Project Manager: Michele Cappelle

Routing Symbol: AUS- 410 **Phone:** 202-267-1195

Effective Date: _____ **Expiration Date:** _____

Collaborating Party: Xcel Energy Services Inc.

STATUS: (Brief narrative)

Successes (How the project met or exceeded its objectives):

Shortcomings (Disappointments, limitations, shortfalls):

- Proposed Corrective actions:

Continuing Activities (Follow-on work; other research; additional agreements):

Check appropriate box:

- Will complete on time
- Will require more time (only)
- Will require more time and minor change in accordance with this PSP
- Will require major change in accordance with this PSP
- Will complete on time and extend activities under a new PSP
- Other: _____

B2 – Final Report

FINAL REPORT

PSP #: 2016-PSP-0921 **Quarterly Report #** _____ **Date:** _____

Synopsis:

Project Manager: Michele Cappelle

Routing Symbol: AUS-410 **Phone:** 202-267-1195

Effective Date: _____ **Expiration Date:** _____

Collaborating Party: Xcel Energy Services Inc.

Prepare a brief narrative report discussing the highlights of the project. Address the following topics (use additional pages if necessary).

Successes (How the project met or exceeded its objectives):

Shortcomings (Disappointments, limitations, shortfalls):

- Proposed Corrective actions:

Continuing Activities (Follow-on work; other research; additional agreements):

C – Data Requirements

Xcel Energy will meet the data reporting requirements in applicable regulations

In addition, Xcel Energy agrees to provide the following data to the FAA on an agreed upon schedule:

1. Data related to potential unsafe conditions, threats, risks, and corresponding corrective measures.
2. Digital data downloaded from UAS:
 - Details to be agreed jointly.
Examples could include:
 - GPS Track, Speed, Altitude, Navigation/Position or associated metrics
 - Performance, power, status
 - Radar data
 - Aircraft configuration
 - Link Strength
3. Flight mission performance:
 - Examples:
 - Mission success rate/tracking
 - Mission metrics such as:
 - ❖ Position to geo fence
 - ❖ Self-correcting behaviors
4. Safety reports data:
 - Text-based reports by operator with details to be determined. This could include narrative data (unstructured) or query data (structured).
5. Sensor data
6. Environmental data associated with flight:
 - Geospatial data sources
 - Local sources
 - Noise, if applicable
 - Emissions, if applicable
 - Fuel Venting, if applicable

Details of the specific data requirements should be customized for the specific operation and programs.