Memorandum from the Office of the Inspector General

October 21, 2025

Jason T. Regg

REQUEST FOR FINAL ACTION – AUDIT 2025-17552 – UNMANNED AIRCRAFT SYSTEMS PROGRAM

We performed an audit of the Tennessee Valley Authority's (TVA) Unmanned Aircraft Systems (UAS) Program due to the increased use of unmanned aircraft in TVA operations. UAS, commonly referred to as drones, are defined as unmanned aircraft vehicles and their associated sensors and control systems. Our audit objectives were to determine if TVA's (1) UAS Program was in compliance with applicable federal requirements and (2) use of unmanned aircraft was in compliance with applicable TVA policies. Our audit scope included TVA's use of unmanned aircraft from January 1, 2024, through December 31, 2024.

In general, we determined TVA's (1) UAS Program complied with applicable federal requirements and (2) use of unmanned aircraft complied with applicable TVA policies. However, we determined 2 of 64 pilots did not have the remote pilot certificate required to operate UAS. We made one recommendation to management to address verification of remote pilot certificates. In response to our draft report, TVA management agreed with our recommendation and provided planned actions to address the recommendation. See the Appendix for TVA's complete response.

BACKGROUND

TVA's UAS Program, managed by TVA's Aviation Services organization, was created in 2019 to provide integration, training, and management for the use of UAS at TVA. According to TVA, UAS offer unique safety and cost-saving opportunities while providing valuable aerial data. Organizations at TVA utilize UAS to perform work such as aerial surveys, thermal imaging, and inspections. These include routine and emergent inspections of transmission lines and equipment, substations, and telecommunications equipment. During calendar year 2024, the program included 121 UAS and 64 active pilots who conducted 1,985 flights.

Federal Requirements

Title 14, Code of Federal Regulations, Part 107 (14 CFR Part 107) governs the airman certification and operation of UAS within the United States. Among other things, 14 CFR Part 107 (1) requires a person operating UAS to obtain a remote pilot certificate, issued by the Federal Aviation Administration (FAA); (2) requires the UAS pilot to maintain visual line of sight of the drone throughout the flight; and (3) places restrictions on UAS operations in certain classes of airspace and above 400 feet. Additionally, 14 CFR Part 48 requires UAS to be registered with the FAA and have unique identifiers.

In December 2023, Congress passed the American Security Drone Act (Drone Act) as part of the larger National Defense Authorization Act. The Drone Act placed an immediate ban on the use of purchasing cards to purchase UAS from a covered foreign entity.[1] Additional provisions of the Drone Act, effective December 2025, prohibit the (1) use of federal funds to purchase UAS manufactured or assembled by a covered foreign entity and (2) operation of UAS manufactured or assembled by a covered foreign entity.

Applicable TVA Policies and Procedures
TVA Standard Programs and Processes (SPP) 10.011, *Unmanned Aircraft Systems Program*, incorporates the requirements of 14 CFR Part 107 and 14 CFR Part 48 and outlines guidance for the acquisition, deployment, training, and management of TVA-owned UAS. TVA-SPP-10.011 also establishes the requirements for vetting and qualifying UAS service providers to perform work for TVA. Key requirements of TVA-SPP-10.011 include:

- No person may act as a UAS pilot unless that person has a remote pilot certificate.
- All UAS pilots must complete initial TVA UAS training, which includes learning how to safely fly the UAS, and annual flight reviews. Aviation Services is responsible for conducting initial and annual training.
- TVA organizations must submit a use case[2] to Aviation Services for review and approval prior to purchasing/operating UAS.
- Aviation Services coordinates the registration of TVA UAS with the FAA.
- UAS service providers must show proof of liability insurance, remote pilot certificates, FAA aircraft registration, and standard operating procedures.

OBJECTIVE, SCOPE, AND METHODOLOGY

Our audit objectives were to determine if TVA's (1) UAS Program is in compliance with applicable federal requirements and (2) use of UAS is in compliance with applicable TVA policies. Our audit scope included TVA's use of unmanned aircraft from January 1, 2024, through December 31, 2024. As mentioned in the Background, during our audit period, the program included 121 UAS, and 64 active pilots who conducted 1,985 flights.

To achieve our objectives, we:

- Reviewed CFRs applicable to UAS and the Drone Act to identify key requirements applicable to the operation of UAS at TVA.

[1] The term “covered foreign entity” generally refers to a foreign entity deemed a national security risk, subject to foreign government control or direction, or specifically listed by a United States government body as prohibited or of concern.

[2] A use case is a form submitted to Aviation Services which includes a description of how UAS will be used to perform work, planned operational environment, UAS pilot information, type of data to be captured, and proposed benefits and savings projections.

- Reviewed TVA-SPP-10.011, *Unmanned Aircraft Systems Program*, to identify key requirements applicable to the operation of UAS at TVA.
- Obtained an understanding of internal controls, including information system controls associated with UAS usage. We identified the following two key controls and designed testing to assess the design, implementation, and operating effectiveness of each control:
  - For TVA organizations to utilize UAS to perform work, a use case must be submitted to Aviation Services and approved.
  - TVA policy requires operators of unmanned aircraft to have a remote pilot certificate with a small UAS rating to meet federal requirements and to understand operating rules.
- Obtained inventory and flight records for the audit period and assessed the reliability of data obtained.
- Reviewed the FAA Airmen Inquiry search Web site to verify all pilots active during the audit period possessed remote pilot certificates.
- Obtained training records to confirm all pilots active during the audit period completed annual recurrent training.
- Selected a nonstatistical random sample of 40 flights from the population of 1,985 flights conducted during the audit period and conducted interviews with pilots, reviewed documentation, and inspected aircraft associated with those flights to determine compliance with requirements (i.e., UAS registration, UAS unique identifier, and approved use case). Since the sample is nonstatistical, the results cannot be projected to the population.
- Reviewed documentation provided to Aviation Services by UAS service providers (i.e., liability insurance, remote pilot certificates, UAS registration and standard operating procedures) to determine compliance with requirements.
- Identified UAS purchased during 2024 to determine if purchases complied with the Drone Act.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

FINDINGS

In general, we determined TVA's (1) UAS Program complied with applicable federal requirements and (2) use of unmanned aircraft complied with applicable TVA policies. Specifically, we determined purchases made during the audit period complied with the Drone Act, UAS had unique identifiers, and UAS were registered with the FAA. In addition, TVA has been overhauling its existing drone fleet to comply with Drone Act requirements related to operating UAS manufactured or assembled by a covered foreign entity by December 2025. Further, we verified (1) use cases for UAS were submitted to Aviation

Services, (2) UAS service providers provided required documentation, and (3) Aviation Services conducted the required annual training. However, we determined 2 of 64 pilots who operated UAS during the audit period did not possess the required remote pilot certificate.

Remote Pilot Certificates Were Not Confirmed
As previously stated, TVA-SPP-10.011, *Unmanned Aircraft Systems Program*, requires all UAS pilots to have a remote pilot certificate. We reviewed the certificates for the 64 active pilots during calendar year 2024 and identified 2 pilots who did not have the required certificate. According to Aviation Services, the 2 pilots began participating in the program in 2021 and 2022 and were unaware that they had not completed all necessary steps to receive their remote pilot certificate.

Requiring pilot certifications is a key control, but it has not been implemented effectively. Aviation Services does not have a formal process for confirming all pilots have the required remote pilot certificate or maintaining this documentation. As a result of the audit, Aviation Services has placed the 2 pilots in "inactive" status, and they will not be allowed to operate UAS until remote pilot certificates are obtained.

RECOMMENDATION

We recommend the Vice President, Safety and Shared Services, update TVA-SPP-10.011, *Unmanned Aircraft Systems Program*, to require Aviation Services to confirm and maintain documentation of remote pilot certificates for all pilots participating in the program.

TVA Management's Comments – In response to our draft report, TVA management stated they agreed with the recommendation and will update TVA-SPP-10.011, *Unmanned Aircraft Systems Program*, to ensure that all remote pilots hold FAA remote pilot certificates and those certificates will be documented and catalogued using existing flight management software. See the Appendix for TVA's complete response.

Auditor's Response – We concur with TVA management's planned actions.

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This report is for your review and final action. Your written comments, which addressed your management decision and actions planned or taken, have been included in the report. Please notify us when final action is complete. In accordance with the Inspector General Act of 1978, as amended, the Office of the Inspector General is required to report to Congress semiannually regarding audits that remain unresolved after 6 months from the date of report issuance.

If you have any questions, please contact Rick C. Underwood, Director, Financial and Operational Audits, at (423) 785-4824. We appreciate the courtesy and cooperation received from your staff during the audit.

Greg Stinson

Greg Stinson
Assistant Inspector General
(Audits and Evaluations)

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OIG File No. 2025-17552

Greg Stinson, WT 2C-K
October 20, 2025

October 17, 2025

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RESPONSE TO REQUEST FOR COMMENTS - DRAFT EVALUATION 2025-17552-Unmanned Aircraft Systems Program

This letter is in response to the Draft Evaluation 2025-17552-Unmanned Aircraft Systems Program

TVA management appreciates the efforts put forth by Stepanie Simmons and Rick Underwood. Thank you for the opportunity to review and respond.

Recommendation: Agree

We recommend the Vice President, Shared Services, update TVA-SPP-10.011, *Unmanned Aircraft Systems Program*, to require Aviation Services to confirm and maintain documentation of remote pilot certificates for all pilots participation in the program.

Response: Aviation Services will update TVA-SPP-10.011 to ensure that all Tier 1 & 2 remote pilots hold FAA remote pilot certificates and those certificates will be documented & catalogued using existing flight management software.

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