November 25, 2024

SENT VIA EMAIL

Mark Argenbright, Director
Public Utility Division
Oklahoma Corporation Commission
PUDenergy@occ.ok.gov

SUBMISSIONS: (1) DETERMINATIONS OF NO HAZARD
(2) DOCUMENTATION OF NO ADVERSE IMPACTS

Pursuant to Section 160.20(C)(1) of the Oklahoma Wind Energy Development Act, 17 O.S. §§ 160.11–160.22 ("the Act"), NextEra Energy Resources, Inc. hereby submits to the Oklahoma Corporation Commission the following documents related to the Willow Creek Wind Energy Center:

(1) Determinations of No Hazard ("DNHs") issued by the Federal Aviation Administration ("FAA") for structures: 2024-WTW-171-OE through 2024-WTW-261-OE.

(2) Mission Compatibility Certification Letter issued by the Military Aviation and Installation Assurance Siting Clearinghouse for structures: 2024-WTW-171-OE through 2024-WTW-261-OE.

Please contact me with any questions regarding these submissions. Thank you.

Sincerely,

Ashard Moore
Project Director
NextEra Energy Resources
Ashard.Moore@nexteraenergy.com

ENERGY, INSTALLATIONS,
AND ENVIRONMENT

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
3400 DEFENSE PENTAGON
WASHINGTON, DC 20301-3400

March 21, 2024

Mr. Bryce Kuhn
NextEra
700 Universe Blvd.
Juno Beach, FL 33408

Subject: Mission Compatibility Certification Letter / ASNs: 2024-WTW-171-OE to 2024-WTW-261-OE

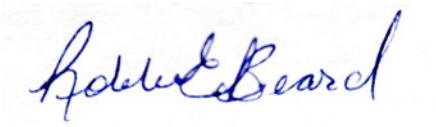
Dear Mr. Kuhn,

The Military Aviation and Installation Assurance Siting Clearinghouse (Clearinghouse) has reviewed the Willow Creek wind farm project in Pawnee, Oklahoma. The Clearinghouse found no adverse impacts to DoD missions in the area and has entered a determination of "No Objection with Provision" via the Federal Aviation Administration's Obstruction Evaluation / Airport Airspace Analysis system.

Our response to the FAA included a notification that further expansion beyond the current project area may be problematic due to proximity to military training routes or military training areas.

We encourage you to consult DoD well in advance of any expansion. If you have any questions, I can be reached at robbin.e.beard.civ@mail.mil.

Sincerely,



Robbin E. Beard
Deputy Director
Military Aviation and Installation
Assurance Siting Clearinghouse

CC:
Oklahoma Corporation Commission
Oklahoma Aeronautics Commission

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-WTW-171-OE
Prior Study No.
2022-WTW-10290-OE

Issued Date: 05/17/2024

Bryce Kuhn
NextEra Energy Resources, LLC - WC
700 Universe Blvd.
Juno Beach, FL 33408

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine 1-b
Location:	Pawnee, OK
Latitude:	36-26-45.00N NAD 83
Longitude:	97-12-31.42W
Heights:	952 feet site elevation (SE)
	650 feet above ground level (AGL)
	1602 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 60 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 11/17/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before June 16, 2024. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager, Rules and Regulations Group via email at OEPetitions@faa.gov, or via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW., Washington, DC 20591. FAA encourages the use of email to ensure timely processing.

This determination becomes final on June 26, 2024 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. Any questions regarding your petition, contact Rules and Regulations Group via telephone (202) 267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed

and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact Buck Reynolds, at (847) 294-7576, or Wayne.Reynolds@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-WTW-171-OE.

Signature Control No: 610155952-621877560 (DNH -WT)
Eric F Johnston
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/FAA_Acronyms.pdf .

1. PROPOSAL DESCRIPTION

Proposed are 91 wind turbines for a project that lies approximately 4.55 NM to 7.04 NM northeast of the airport reference point (ARP) of the Perry Municipal Airport (F22), Perry, OK, extending clockwise to 3.32 NM to 13.75 NM east southeast of the F22 ARP.

For the sake of efficiency, all of the wind turbines in this project that have similar impacts are included in this narrative. All 91 wind turbines have been identified as having aeronautical effects which are outlined in the summary below.

The proposed wind turbines' described heights and locations are expressed in Above Ground Level (AGL) height, Above Mean Sea Level (AMSL) height and latitude (LAT)/longitude (LONG).

ASN	AGL	AMSL	LAT	LONG
2024-WTW-171-OE	650	1602	36-26-45.00N	97-12-31.42W
2024-WTW-172-OE	650	1617	36-26-27.38N	97-12-12.19W
2024-WTW-173-OE	650	1612	36-26-12.17N	97-12-27.96W
2024-WTW-174-OE	650	1650	36-26-11.97N	97-11-55.19W
2024-WTW-175-OE	650	1658	36-25-57.16N	97-11-26.42W
2024-WTW-176-OE	650	1642	36-26-08.46N	97-10-40.06W
2024-WTW-177-OE	650	1579	36-25-58.30N	97-09-55.15W
2024-WTW-178-OE	650	1650	36-25-43.23N	97-09-36.34W
2024-WTW-179-OE	650	1626	36-25-32.88N	97-09-18.81W
2024-WTW-180-OE	650	1652	36-25-26.09N	97-11-25.82W
2024-WTW-181-OE	650	1657	36-25-21.91N	97-11-07.76W
2024-WTW-182-OE	650	1640	36-25-28.88N	97-10-19.02W
2024-WTW-183-OE	650	1664	36-25-05.82N	97-12-02.90W
2024-WTW-184-OE	650	1666	36-25-06.02N	97-11-44.07W
2024-WTW-185-OE	650	1640	36-24-56.32N	97-10-39.69W
2024-WTW-186-OE	650	1623	36-24-35.11N	97-12-23.48W
2024-WTW-187-OE	650	1647	36-24-30.24N	97-12-04.09W
2024-WTW-188-OE	650	1675	36-24-31.51N	97-10-55.20W
2024-WTW-189-OE	650	1632	36-23-50.87N	97-12-29.40W

2024-WTW-190-OE / 650 / 1666 / 36-23-58.59N / 97-12-11.88W

2024-WTW-191-OE / 650 / 1680 / 36-23-48.11N / 97-11-52.81W
2024-WTW-192-OE / 650 / 1653 / 36-24-07.56N / 97-11-27.39W
2024-WTW-193-OE / 650 / 1674 / 36-24-01.02N / 97-11-09.40W
2024-WTW-194-OE / 650 / 1702 / 36-23-51.37N / 97-10-53.41W
2024-WTW-195-OE / 650 / 1656 / 36-24-10.43N / 97-10-39.48W
2024-WTW-196-OE / 650 / 1669 / 36-23-13.42N / 97-12-31.62W
2024-WTW-197-OE / 650 / 1662 / 36-23-21.35N / 97-12-00.18W
2024-WTW-198-OE / 650 / 1675 / 36-23-09.89N / 97-11-27.45W
2024-WTW-199-OE / 650 / 1702 / 36-23-22.01N / 97-10-58.49W
2024-WTW-200-OE / 650 / 1738 / 36-23-14.77N / 97-10-07.19W

2024-WTW-201-OE / 650 / 1723 / 36-23-12.95N / 97-09-49.85W
2024-WTW-202-OE / 650 / 1712 / 36-23-18.27N / 97-09-14.33W
2024-WTW-203-OE / 650 / 1691 / 36-22-59.79N / 97-09-02.56W
2024-WTW-204-OE / 650 / 1707 / 36-22-52.34N / 97-12-17.95W
2024-WTW-205-OE / 650 / 1678 / 36-22-58.03N / 97-11-49.64W
2024-WTW-206-OE / 650 / 1665 / 36-22-45.96N / 97-10-58.95W
2024-WTW-207-OE / 650 / 1681 / 36-22-54.69N / 97-10-39.44W
2024-WTW-208-OE / 650 / 1659 / 36-22-13.79N / 97-11-00.02W
2024-WTW-209-OE / 650 / 1634 / 36-22-15.71N / 97-10-39.19W
2024-WTW-210-OE / 650 / 1679 / 36-22-30.36N / 97-09-17.39W

2024-WTW-211-OE / 650 / 1661 / 36-22-21.09N / 97-09-00.04W
2024-WTW-212-OE / 650 / 1654 / 36-21-50.06N / 97-09-17.78W
2024-WTW-213-OE / 650 / 1647 / 36-21-48.36N / 97-08-58.24W
2024-WTW-214-OE / 650 / 1655 / 36-21-37.15N / 97-08-36.12W
2024-WTW-215-OE / 650 / 1600 / 36-22-00.69N / 97-08-16.50W
2024-WTW-216-OE / 650 / 1638 / 36-21-53.14N / 97-07-54.69W
2024-WTW-217-OE / 650 / 1670 / 36-22-01.69N / 97-07-05.49W
2024-WTW-218-OE / 650 / 1646 / 36-22-03.58N / 97-06-41.62W
2024-WTW-219-OE / 650 / 1663 / 36-22-17.04N / 97-06-04.37W
2024-WTW-220-OE / 650 / 1674 / 36-22-45.81N / 97-06-03.43W

2024-WTW-221-OE / 650 / 1655 / 36-23-10.21N / 97-05-53.21W
2024-WTW-222-OE / 650 / 1693 / 36-22-52.01N / 97-05-38.96W
2024-WTW-223-OE / 650 / 1659 / 36-22-51.01N / 97-05-21.05W
2024-WTW-224-OE / 650 / 1654 / 36-22-47.44N / 97-04-40.53W
2024-WTW-225-OE / 650 / 1613 / 36-26-33.62N / 97-11-05.78W
2024-WTW-226-OE / 650 / 1640 / 36-22-43.08N / 97-03-19.81W
2024-WTW-227-OE / 650 / 1663 / 36-22-26.01N / 97-03-05.67W
2024-WTW-228-OE / 650 / 1650 / 36-22-19.17N / 97-04-52.42W
2024-WTW-229-OE / 650 / 1663 / 36-22-02.85N / 97-04-30.43W
2024-WTW-230-OE / 650 / 1626 / 36-26-09.08N / 97-09-13.46W

2024-WTW-231-OE / 650 / 1660 / 36-22-02.48N / 97-03-17.37W
2024-WTW-232-OE / 650 / 1623 / 36-21-28.31N / 97-05-32.42W
2024-WTW-233-OE / 650 / 1645 / 36-21-26.67N / 97-05-11.36W

2024-WTW-234-OE / 650 / 1676 / 36-21-27.86N / 97-04-49.91W
2024-WTW-235-OE / 650 / 1637 / 36-20-56.66N / 97-03-06.62W
2024-WTW-236-OE / 650 / 1630 / 36-20-58.37N / 97-02-48.36W
2024-WTW-237-OE / 650 / 1622 / 36-20-49.33N / 97-02-30.94W
2024-WTW-238-OE / 650 / 1608 / 36-20-48.50N / 97-02-08.09W
2024-WTW-239-OE / 650 / 1643 / 36-20-32.06N / 97-01-47.25W
2024-WTW-240-OE / 650 / 1667 / 36-21-24.97N / 97-01-36.69W

2024-WTW-241-OE / 650 / 1626 / 36-21-13.95N / 97-01-11.69W
2024-WTW-242-OE / 650 / 1653 / 36-20-59.78N / 97-01-28.18W
2024-WTW-243-OE / 650 / 1611 / 36-20-43.27N / 97-01-10.92W
2024-WTW-244-OE / 650 / 1625 / 36-20-37.04N / 97-00-35.85W
2024-WTW-245-OE / 650 / 1651 / 36-24-05.33N / 97-05-59.97W
2024-WTW-246-OE / 650 / 1615 / 36-24-28.93N / 97-05-49.10W
2024-WTW-247-OE / 650 / 1634 / 36-24-27.66N / 97-05-27.96W
2024-WTW-248-OE / 650 / 1633 / 36-24-55.92N / 97-05-23.53W
2024-WTW-249-OE / 650 / 1627 / 36-20-18.25N / 96-59-58.09W
2024-WTW-250-OE / 650 / 1613 / 36-26-45.61N / 97-09-08.77W

2024-WTW-251-OE / 650 / 1625 / 36-26-44.49N / 97-11-57.77W
2024-WTW-252-OE / 650 / 1670 / 36-25-30.27N / 97-10-49.14W
2024-WTW-253-OE / 650 / 1635 / 36-22-28.76N / 97-08-12.06W
2024-WTW-254-OE / 650 / 1616 / 36-21-57.24N / 97-06-23.25W
2024-WTW-255-OE / 650 / 1645 / 36-26-37.39N / 97-10-45.76W
2024-WTW-256-OE / 650 / 1609 / 36-25-58.16N / 97-10-20.26W
2024-WTW-257-OE / 650 / 1573 / 36-26-50.73N / 97-09-33.80W
2024-WTW-258-OE / 650 / 1632 / 36-24-36.40N / 97-11-44.51W
2024-WTW-259-OE / 650 / 1640 / 36-22-19.61N / 97-08-35.39W
2024-WTW-260-OE / 650 / 1659 / 36-22-47.12N / 97-08-44.85W

2024-WTW-261-OE / 650 / 1602 / 36-20-11.67N / 97-00-14.91W

2. TITLE 14 CFR PART 77 - OBSTRUCTION STANDARDS EXCEEDED

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. The proposals would all exceed this standard by 151 feet.

b. Section 77.17(a)(2): a height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 NM miles of the established reference point of F22, and that height increases in the proportion of 100 feet for each additional NM from the airport up to a maximum of 499 feet. The following would exceed by:

2024-WTW-171-OE 210 feet
2024-WTW-172-OE 227 feet
2024-WTW-173-OE 255 feet
2024-WTW-174-OE 260 feet
2024-WTW-175-OE 248 feet
2024-WTW-176-OE 173 feet
2024-WTW-180-OE 271 feet

2024-WTW-181-OE 256 feet
2024-WTW-182-OE 177 feet
2024-WTW-183-OE 336 feet

2024-WTW-184-OE 314 feet
2024-WTW-185-OE 223 feet
2024-WTW-186-OE 349 feet
2024-WTW-187-OE 352 feet
2024-WTW-188-OE 275 feet
2024-WTW-189-OE 389 feet
2024-WTW-190-OE 390 feet
2024-WTW-191-OE 368 feet
2024-WTW-192-OE 322 feet
2024-WTW-193-OE 307 feet

2024-WTW-194-OE 289 feet
2024-WTW-195-OE 261 feet
2024-WTW-196-OE 427 feet
2024-WTW-197-OE 384 feet
2024-WTW-198-OE 341 feet
2024-WTW-199-OE 301 feet
2024-WTW-200-OE 233 feet
2024-WTW-201-OE 210 feet
2024-WTW-202-OE 162 feet
2024-WTW-204-OE 408 feet

2024-WTW-205-OE 371 feet
2024-WTW-206-OE 302 feet
2024-WTW-207-OE 276 feet
2024-WTW-208-OE 296 feet
2024-WTW-209-OE 244 feet
2024-WTW-210-OE 163 feet
2024-WTW-225-OE 148 feet
2024-WTW-251-OE 202 feet
2024-WTW-252-OE 230 feet
2024-WTW-255-OE 155 feet
2024-WTW-256-OE 125 feet
2024-WTW-258-OE 309 feet

c. Section 77.17 (a)(3): A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

The following proposed turbine would increase the CAT C circling Minimum Decent Altitude (MDA) for the RNAV (GPS) RWY 13 (PROPOSED) for the Perry Muni Airport (F22), Perry, OK; increase CAT C Circling MDA from anticipated 1620 feet AMSL to 2020 feet AMSL. W/2C increase from 1620 feet AMSL to 1980 feet AMSL. (PONCA CITY ALTIMETER SETTING MINIMUMS) increase CAT C Circling MDA from anticipated 1680 feet AMSL to 2080 feet AMSL W/2C 1680 feet AMSL to 2040 feet AMSL.

2024-WTW-196-OE

The following proposed turbines would impact the Perry Muni (F22) Perry OK. Obstacles penetrate RWY 13 (PENDING) 40:1 departure surface by _____ ¬¬¬¬¬ feet requiring TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES RWY 13 (PENDING) from STD to STD with a minimum climb gradient increase from 200 to _____ feet per NM to _____.

ASN	Penetration	C/G to ___	feet per/NM	climb to
2024-WTW-189-OE	10	206		1900
2024-WTW-190-OE	9	205		1900
2024-WTW-191-OE	25	212		2000
2024-WTW-196-OE	131	281		1900
2024-WTW-197-OE	69	236		1900
2024-WTW-198-OE	53	223		1900
2024-WTW-199-OE	15	206		2000
2024-WTW-204-OE	193	303		2000
2024-WTW-205-OE	111	252		1900
2024-WTW-206-OE	24	209		1900
2024-WTW-208-OE	45	216		1900

The following proposed turbines would increase the Minimum Decent Altitude (MDA) at the Perry Muni (F22) Perry, OK. VOR RWY 17 AMDT 3D; increase S-17 from 1500 feet AMSL to 1720 feet AMSL; increase CAT A/B/C Circling MDA from 1500/1500/1620 feet AMSL to 1720 feet AMSL. W/2C 1500 feet AMSL to 1660 feet AMSL; increase CAT A/B/C Circling MDA from 1500/1500/1620 feet AMSL to 1660 feet AMSL (PONCA CITY ALTIMETER SETTING MINIMUMS) increase S-17 from 1560 feet AMSL to 1780 feet AMSL; increase CAT A/B/C Circling MDA from 1560/1560/1680 feet AMSL to 1780 feet AMSL. W/2C 1560 feet AMSL to 1720 feet AMSL; increase CAT A/B/C Circling MDA from 1560/1560/1680 feet AMSL to 1720 feet AMSL.

2024-WTW-171-OE

The following structures increase the Minimum Vectoring Altitude (MVA) Tulsa ATCT/TRACON (TUL), Tulsa, OK. Tulsa ATCT/TRACON (TUL) OK. TUL_MVA_FUS3_2022 TUL_QAF_MVA_2022 MVA increase Sector I from 2500 feet AMSL to as much as 2700 feet AMSL.

Increase to 2600 feet AMSL
2024-WTW-171-OE
2024-WTW-172-OE
2024-WTW-173-OE
2024-WTW-176-OE
2024-WTW-177-OE
2024-WTW-179-OE
2024-WTW-182-OE
2024-WTW-185-OE
2024-WTW-186-OE
2024-WTW-187-OE

2024-WTW-189-OE

2024-WTW-209-OE
2024-WTW-213-OE
2024-WTW-215-OE
2024-WTW-216-OE
2024-WTW-218-OE
2024-WTW-225-OE
2024-WTW-226-OE
2024-WTW-230-OE
2024-WTW-232-OE

2024-WTW-233-OE
2024-WTW-235-OE
2024-WTW-236-OE
2024-WTW-237-OE
2024-WTW-238-OE
2024-WTW-239-OE
2024-WTW-241-OE
2024-WTW-243-OE
2024-WTW-244-OE
2024-WTW-246-OE

2024-WTW-247-OE
2024-WTW-248-OE
2024-WTW-249-OE
2024-WTW-250-OE
2024-WTW-251-OE
2024-WTW-253-OE
2024-WTW-254-OE
2024-WTW-255-OE
2024-WTW-256-OE
2024-WTW-257-OE

2024-WTW-258-OE
2024-WTW-259-OE
2024-WTW-261-OE

Increase to 2700 feet AMSL
2024-WTW-174-OE
2024-WTW-175-OE
2024-WTW-178-OE
2024-WTW-180-OE
2024-WTW-181-OE
2024-WTW-183-OE
2024-WTW-184-OE
2024-WTW-188-OE
2024-WTW-190-OE
2024-WTW-191-OE

2024-WTW-192-OE

2024-WTW-193-OE
2024-WTW-194-OE
2024-WTW-195-OE
2024-WTW-196-OE
2024-WTW-197-OE
2024-WTW-198-OE
2024-WTW-199-OE
2024-WTW-200-OE
2024-WTW-201-OE

2024-WTW-202-OE
2024-WTW-203-OE
2024-WTW-204-OE
2024-WTW-205-OE
2024-WTW-206-OE
2024-WTW-207-OE
2024-WTW-208-OE
2024-WTW-210-OE
2024-WTW-211-OE
2024-WTW-212-OE

2024-WTW-214-OE
2024-WTW-217-OE
2024-WTW-219-OE
2024-WTW-220-OE
2024-WTW-221-OE
2024-WTW-222-OE
2024-WTW-223-OE
2024-WTW-224-OE
2024-WTW-227-OE
2024-WTW-228-OE

2024-WTW-229-OE
2024-WTW-231-OE
2024-WTW-234-OE
2024-WTW-240-OE
2024-WTW-242-OE
2024-WTW-245-OE
2024-WTW-252-OE
2024-WTW-260-OE

The following structures increase the Minimum Vectoring Altitude (MVA) Tulsa ATCT/TRACON (TUL), Tulsa, OK. Tulsa ATCT/TRACON (TUL) OK. TUL_MVA_FUS5_2022 TUL_TUL_ASR-9_MVA_2022 MVA increase Sector I from 2600 feet AMSL to 2700 feet AMSL.

2024-WTW-174-OE
2024-WTW-175-OE
2024-WTW-178-OE
2024-WTW-180-OE

2024-WTW-181-OE
2024-WTW-183-OE
2024-WTW-184-OE
2024-WTW-188-OE
2024-WTW-190-OE
2024-WTW-191-OE

2024-WTW-192-OE
2024-WTW-193-OE
2024-WTW-194-OE
2024-WTW-195-OE
2024-WTW-196-OE
2024-WTW-197-OE
2024-WTW-198-OE
2024-WTW-199-OE
2024-WTW-200-OE
2024-WTW-201-OE

2024-WTW-202-OE
2024-WTW-203-OE
2024-WTW-204-OE
2024-WTW-205-OE
2024-WTW-206-OE
2024-WTW-207-OE
2024-WTW-208-OE
2024-WTW-210-OE
2024-WTW-211-OE
2024-WTW-212-OE

2024-WTW-214-OE
2024-WTW-217-OE
2024-WTW-219-OE
2024-WTW-220-OE
2024-WTW-221-OE
2024-WTW-222-OE
2024-WTW-223-OE
2024-WTW-224-OE
2024-WTW-227-OE
2024-WTW-228-OE

2024-WTW-229-OE
2024-WTW-231-OE
2024-WTW-234-OE
2024-WTW-240-OE
2024-WTW-242-OE
2024-WTW-245-OE
2024-WTW-252-OE
2024-WTW-260-OE

The following structures increase the Minimum Vectoring Altitude (MVA) Tulsa ATCT/TRACON (TUL), Tulsa, OK. Tulsa ATCT/TRACON (TUL) OK. TUL_MVA_FUS3_2022 TUL_QAF_MVA_2022 MVA increase Sector I from 2500 feet AMSL to as much as 2700 feet AMSL.

Increase to 2600 feet AMSL
2024-WTW-176-OE
2024-WTW-177-OE
2024-WTW-179-OE
2024-WTW-182-OE
2024-WTW-185-OE
2024-WTW-209-OE
2024-WTW-213-OE
2024-WTW-215-OE
2024-WTW-216-OE
2024-WTW-218-OE

2024-WTW-225-OE
2024-WTW-226-OE
2024-WTW-230-OE
2024-WTW-232-OE
2024-WTW-233-OE
2024-WTW-235-OE
2024-WTW-236-OE
2024-WTW-237-OE
2024-WTW-238-OE
2024-WTW-239-OE

2024-WTW-241-OE
2024-WTW-243-OE
2024-WTW-244-OE
2024-WTW-246-OE
2024-WTW-247-OE
2024-WTW-248-OE
2024-WTW-249-OE
2024-WTW-250-OE
2024-WTW-253-OE
2024-WTW-254-OE

2024-WTW-255-OE
2024-WTW-256-OE
2024-WTW-257-OE
2024-WTW-259-OE
2024-WTW-261-OE

Increase to 2700 feet AMSL
2024-WTW-178-OE
2024-WTW-180-OE
2024-WTW-181-OE
2024-WTW-188-OE

2024-WTW-191-OE
2024-WTW-192-OE
2024-WTW-193-OE
2024-WTW-194-OE
2024-WTW-195-OE
2024-WTW-198-OE

2024-WTW-199-OE
2024-WTW-200-OE
2024-WTW-201-OE
2024-WTW-202-OE
2024-WTW-203-OE
2024-WTW-205-OE
2024-WTW-206-OE
2024-WTW-207-OE
2024-WTW-208-OE
2024-WTW-210-OE

2024-WTW-211-OE
2024-WTW-212-OE
2024-WTW-214-OE
2024-WTW-217-OE
2024-WTW-219-OE
2024-WTW-220-OE
2024-WTW-221-OE
2024-WTW-222-OE
2024-WTW-223-OE
2024-WTW-224-OE

2024-WTW-227-OE
2024-WTW-228-OE
2024-WTW-229-OE
2024-WTW-231-OE
2024-WTW-234-OE
2024-WTW-240-OE
2024-WTW-242-OE
2024-WTW-245-OE
2024-WTW-252-OE
2024-WTW-260-OE

The following structures increase the Minimum Vectoring Altitude (MVA) Tulsa ATCT/TRACON (TUL), Tulsa, OK. Tulsa ATCT/TRACON (TUL) OK. TUL_MVA_FUS5_2022 TUL_TUL_ASR-9_MVA_2022 MVA increase Sector I from 2500 feet AMSL to 2700 feet AMSL.

2024-WTW-174-OE
2024-WTW-175-OE
2024-WTW-178-OE
2024-WTW-180-OE
2024-WTW-181-OE

2024-WTW-183-OE
2024-WTW-184-OE
2024-WTW-188-OE
2024-WTW-190-OE
2024-WTW-191-OE

2024-WTW-192-OE
2024-WTW-193-OE
2024-WTW-194-OE
2024-WTW-195-OE
2024-WTW-196-OE
2024-WTW-197-OE
2024-WTW-198-OE
2024-WTW-199-OE
2024-WTW-200-OE
2024-WTW-201-OE

2024-WTW-202-OE
2024-WTW-203-OE
2024-WTW-204-OE
2024-WTW-205-OE
2024-WTW-206-OE
2024-WTW-207-OE
2024-WTW-208-OE
2024-WTW-210-OE
2024-WTW-211-OE
2024-WTW-212-OE

2024-WTW-214-OE
2024-WTW-217-OE
2024-WTW-219-OE
2024-WTW-220-OE
2024-WTW-221-OE
2024-WTW-222-OE
2024-WTW-223-OE
2024-WTW-224-OE
2024-WTW-227-OE
2024-WTW-228-OE

2024-WTW-229-OE
2024-WTW-231-OE
2024-WTW-234-OE
2024-WTW-240-OE
2024-WTW-242-OE
2024-WTW-245-OE
2024-WTW-252-OE
2024-WTW-260-OE

3. TITLE 14 CFR PART 77 - EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At a height greater than 499 feet AGL, the proposed wind farm would extend into airspace normally used for VFR en route flight and may be located within 2 statute miles (SM) of potential VFR Routes as defined by FAA Order 7400.2, Section 6-3-8. The turbines within 2 SM of a VFR Route would have an adverse effect upon VFR air navigation.

4. TITLE 14 CFR PART 77 - FURTHER STUDY AND PUBLIC COMMENTS

In order to facilitate the public comment process, all 91 studies were circularized under ASN 2024-WTW-217-OE on 03/20/2024, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No comments were received during the public comment period as a result of the circularization concluding on 04/26/2024.

5. BASIS FOR DETERMINATION

a. IFR EFFECTS

The aeronautical study identified an IFR effect(s) for F22 and TUL. MVAs are solely used by ATC, not published for public use and therefore are not circulated for public comment. A review by the controlling facility determined that increasing the altitude in the sector would ensure the required obstacle clearance is maintained and therefore would not have a substantial adverse effect on air traffic operations.

The increase to the F22 Runway 13 climb gradient is not considered excessive. Increasing the climb gradient would ensure the required obstacle clearances are maintained and would not have a significant impact on a pilot's ability to safely execute the procedures. Therefore, the proposed wind farm would not have a substantial adverse effect on IFR operations for F22.

The increase to the F22 Runway VOR RWY 17 AMDT 3D S-17 and Circling MDAs is not considered excessive. Increasing the MDAs ensures the required obstable clearances are maintained and would not have a asignificant impact on a pilot's ability to safely execute the procedures. Additionally, there are RNAV (GPS) straight in and circling procedures to RWY 17 and RWY 35 that have better minimums than the VOR RWY 17 straight in procedure. Therefore, the proposed wind farm would not have a substantial advers effect on IFR operations at F22.

The proposed structures would have no effect on any other existing or proposed arrival, departure, or en route IFR operations or procedures.

b. VFR EFFECTS

The aeronautical study identified no effect on any existing or proposed VFR arrival or departure operations. The proposals would be located within the traffic pattern airspace for as applied to the 17/35, Left/Right, Climb/Decent Area as applied to CAT D aircraft, and F22, RWY 13/31, Left/Right, Climb/Decent Area as applied to CAT C and D aircraft. Airport records indicate that F22 does not support regular and continuous CAT D operations. Additionally, annual traffic data for F22 identified no CAT D operations. RWY 13/31 does not support CAT C or D operations. Therefore the proposal would be located beyond normal traffic pattern airspace and would not have an adverse effect on VFR traffic pattern operations at F22, or any other known public use or military airports. At 650 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and

available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm.

In accordance with FAA Order 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

c. RADAR EFFECTS

The aeronautical study identified no effect on ATC radar, direction finders, ATC tower line-of-sight visibility, air navigation, communication facilities, and other surveillance systems for any known public-use or military airports.

d. CUMULATIVE EFFECT

The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty (60) days prior to beginning construction, at the OE/AAA website (https://oeaaa.faa.gov) for all of the wind turbines in this project.

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (https://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

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ACRONYMS & ABBREVIATIONS

AGL, Above Ground Level
AMSL, Above Mean Sea Level
ARP, Airport Reference Point
ARSR, Air Route Surveillance Radar
ARTCC, Air Route Traffic Control Center
ASN, Aeronautical Study Number
ASR, Airport Surveillance Radar
ATC, Air Traffic Control
ATCT, Air Traffic Control Tower

CARSR, Common Air Route Surveillance Radar
CAT, Category
CFR, Code of Federal Regulations
CG, Climb Gradient
DA, Decision Altitude
DME, Distance Measuring Equipment
FAA, Federal Aviation Administration
FUS, Fusion
GPS, Global Positioning System
IAF, Initial Approach Fix
IAP, Instrument Approach Procedure
ICA, Initial Climb Area
IFR, Instrument Flight Rules
INT, Intersection
LAT, Latitude
LNAV, Lateral Navigation
LOC, Localizer
LONG, Longitude
LP, Localizer Performance
LPV, Localizer Performance with Vertical Guidance
MDA, Minimum Descent Altitude
MEA, Minimum En route Altitude
MET, Meteorological Evaluation Tower
MIA, Minimum IFR Altitude
Min, Minimum
MOCA, Minimum Obstruction Clearance Altitude
MSA, Minimum Safe Altitude
MSL, Mean Sea Level
MVA, Minimum Vectoring Altitude
NA, Not Authorized
NAS, National Airspace System
NAVAID, Navigational Aid
NDB, Non-Directional Radio Beacon
NEH, No Effect Height
NM, Nautical Mile
NOTAM, Notice to Airmen
NPF, Notice of Preliminary Findings
OCS, Obstacle Clearance Surface
OE, Obstruction Evaluation
OEG, Obstruction Evaluation Group
Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.
P-NOTAM, Permanent Notice to Airmen
RLOS, Radar Line of Sight
RNAV, Area Navigation
RNP, Required Navigation Performance
RWY, Runway
S-, Straight-in
SE, Site Elevation

S-LOC, Straight-in Localizer
SM, Statute Miles
Std., Standard
TAA, Terminal Arrival Area
TACAN, Tactical Air Navigation System
TERPS, Terminal Instrument Procedures
TPA, Traffic Pattern Airspace
TRACON, Terminal Radar Approach Control
V, Victor Airway
VFR, Visual Flight Rules
VHF, Very High Frequency
VOR, VHF Omnidirectional Radio Range System
VORTAC, VOR/TACAN System
WTE, Wind Turbine East
WTW, Wind Turbine West

Sectional Map for ASN 2024-WTW-171-OE