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By email: [Pamela.Monroe@sec.nh.gov](mailto:Pamela.Monroe@sec.nh.gov)

New Hampshire Site Evaluation Committee  
Attention: Pamela G. Monroe, Administrator  
21 S. Fruit Street, Suite 10  
Concord, NH 03301-2429

**Re: Antrim Wind Energy – Inspection, Maintenance and Optimization of the Aircraft Detection Lightning System**

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Dear Ms. Pamela G. Monroe,

This letter summarizes the inspection, maintenance and optimization of the Aircraft Detection Lightning System (ADLS) at the Antrim Wind Energy facility (AWE).

**Inspection and Maintenance of the ADLS**

First, it is important to mention that for the time being, and since the commissioning, the ADLS manufacturer is committed to provide support and maintenance services to AWE's ADLS. In addition, AWE is in the process of getting an agreement to extend this commitment for the next 20 years.

As mentioned previously, the ADLS communication and operational status are checked at least once every 24 hours by TransAlta's Wind Control Center (WCC). WCC and site team involve the ADLS manufacturer support team as required.

In terms of maintenance, TransAlta performs inspections of the system and scheduled maintenance (changing air filters, desiccator, etc.) as recommended by the ADLS manufacturer. The manufacturer also performs preventive and corrective maintenance on the ADLS components as required.

**Optimization of the ADLS**

Since the commissioning of the ADLS, TransAlta has been working with the ADLS manufacturer in order to optimize the system. Recall that the primary function of the ADLS is to make sure that the aerial obstruction lights are properly turned on when there is an aircraft in the project's vicinity (inside a volume having a minimum radius of 3 nautical miles, the "Detection Zone"). This means that the system uses a conservative approach to assure that any aircraft is properly detected throughout their passage in the Detection Zone (turning on the aerial obstruction lights once it enters the zone and turning it off once it exits). To do so, the system is very sensitive and due to the hilly surrounding it may detect moving objects very close to the ground including car traffic

and movement in tree canopy. Any moving object detected within the Detection Zone that satisfies specific thresholds (such as radar cross-section, velocity, etc.) will trigger the illumination of the aerial obstruction lights. Additionally, should the detected object tracking be lost or uncertain before exiting the Detection Zone, the system will keep the lights on for a period of 30 minutes (this is per FAA requirements).

During the commissioning, Non-Tracking Zones were defined to reduce the detection by the ADLS of moving objects unrelated to air traffic, such as car traffic on some of the main roads. Currently, the system undergoes optimization using the operational data in order to adjust the Non-Tracking Zones. Those adjusted Non-Tracking Zones would mask the varying ground levels in order to further reduce the detection of moving objects close to the ground and unrelated to air traffic. This is a long and continuing process as more operational data comes in. It is also done in a way to assure that the adjustments still allow for the proper detection of any and all aircrafts inside the Detection Zone.

In addition, optimization is also undergoing to enhance the permanent echo<sup>1</sup> detection which will reduce the occurrence of uncertainty due to temporary loss of permanent echo as explained in our March 4, 2020 letter to your attention.

For both of those optimization processes, it is not possible to define a timeline for completion as they are continuous. Also, due to the current COVID-19 situation, the optimization processes are progressing a little bit slower than usual, but the ADLS still operates as intended and benefit from the inspections and support as required. Nevertheless, we are committed that optimization continues now and, in the future, as necessary.

We wish to reiterate that TransAlta is committed to the safe operation of all its facilities including AWE.

Regards,

**TRANSALTA CORPORATION**



Ethan Mollasalehi, P. Eng.  
Antrim Wind Energy Lead Technician & Mechanical Engineer

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<sup>1</sup> The system performs continuous checks on the persistence of distinguishable permanent/fix echo.