![aercoustics logo]

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September 17, 2019   Aercoustics Project #: 14215.04

Suncor Energy Services Inc.

150-6th Avenue S.W, P.O Box 2844
Calgary, Alberta
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ATTN: Mark Kozak

CC: -

Subject: Additional Acoustic I-Audit for the Adelaide Wind Power Project
          REA#8279-9AUP2B

Aercoustics Engineering Limited ("Aercoustics") has been retained by Suncor Energy Services Incorporated ("Suncor") to conduct an additional acoustic audit to support the completion of the requirements outlined in the Renewable Energy Approval ("REA") for the Suncor Adelaide Wind Power Project ("SAWPP"). SAWPP operates under REA #8279-9AUP2B.

This letter contains responses to MECP comments received on September 4, 2019 for the Adelaide Wind Power Project I-audit report for receptor R754 which are provided below. Original MECP comment is provided in black and Aercoustics' response is provided in purple.

1 – Missing Detailed Wind Roses: Additional wind roses for when the turbines were in operation and parked (Turbine ON/Turbine OFF) should be included in the report.

A) Action: Provide wind roses for Turbine ON and Turbine OFF conditions. A revised report is required.

> A revised report which includes additional wind roses for when the turbines were in operation and parked (Turbine ON/Turbine OFF) is attached as part of the submission with this letter.

2 – Additional Filtering: Pertaining to section 3.3 of the audit report, the use of additional filters not included in the 2017 Compliance Protocol must be approved by the Ministry before submission.

B) This comment is specifically addressing the use of the "Laeq-L90 Difference Above Threshold" filter, which is used to eliminate data points.

Significant extraneous transient events are detectable by comparing the LAeq with the L90 level for the same interval. Large differences between the average and minimum sound level for the same interval are indicative of the interval being influenced by extraneous transient noise from the ambient.

It should be noted that the LAeq-L90 Transient filter has not been used to eliminate data points. Listening tests have been conducted to identify contaminated intervals influenced by extraneous transient noise from the ambient. Any reference to the LAeq-L90 Transient Filter has been removed from the revised report attached as part of the submission with this letter.

3 – Inconsistent Data: In the excel document titled "Aerc003- Suncor Adelaide I-Audit Data Package 14215.00 (201.07.29).xlsx", some of the values for nacelle position are not between 0 and 360 degrees as expected.

A) Examples of this include:
   i.   12/04/2019 3:41:00 AM – Nacelle position of turbine WTG06:485°
   ii. 17/04/2019 4:51:00 AM – Nacelle position of turbine WTG06: -310°

B) Action: A revised Excel sheet and a revised report (if applicable) is required.

The yaw position of the turbines provided in the excel document corresponds to the SCADA parameter Yaw Position (wtc_scYawPos_mean) and is sometimes outside 0°-360° (both – and +) due to the need to measure the turbine rotations.

A revised Excel sheet has been provided with the parameter Nacelle Position (wtc_NacelPos_mean) which solely records the nacelle position (0°-360°) as part of the submission with this letter.

> It should be noted that the evaluation of the downwind analysis is based on Nacelle Position (0º – 360º) and the analysis and conclusions of the report remain the same.

4 – Downwind angle: Please define the range of downwind angle (i.e. from WTG06 to R754) in the audit report. It seems some of included data are not downwind as defined in the Protocol (i.e. Section E5.5 3). A revised report and an excel sheet is required to address this issue.
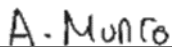
> Downwind angle from WTG06 to R754 is 208 ±45 degrees. This corresponds to a range of 163 to 253 degrees. All included data for the Turbine ON condition is downwind as defined in the Protocol (i.e. Section E5.5.3).
>
> A statement defining the range of downwind angle has also been provided in the revised report Section 3.3.2. The revised excel sheet contains the parameter Nacelle position which shows that all included data for the Turbine ON condition is downwind as defined in the Protocol (i.e. Section E5.5.3).

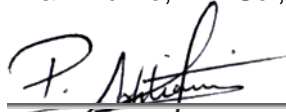Please do not hesitate to contact us should you have any questions or require anything further.

Sincerely,

AERCOUSTICS ENGINEERING LIMITED

A. Munro

Allan Munro, B.A.Sc., P.Eng

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