

Revision of Wind Farm Certification Onshore Wind Power Plant Edition (NKRE-GL-WFC01)

Comparison Table for Previous and New Versions

[After revision: Edition: September 2026 ← Before revision: Edition: September 2024]

September 30, 2026

NIPPON KAIJI KYOKAI (ClassNK)

- The underlined parts of the provisions listed in the "Before revision" column shall be amended to the underlined parts of the corresponding provisions listed in the "After revision" column.
- Where a provision is marked with double lines in the "Before revision" column and there is no corresponding provision in the "After revision" column, that provision shall be deleted.
- Where a provision is marked with double lines in the "After revision" column and there is no corresponding provision listed in the "Before revision" column, that provision shall be added.

End

Cover and revision history

After revision	Before revision
Revision History I. to III. <i>(Omitted)</i> <u>III. New issue dated September 30, 2026 (Document No.: NKRE-GL-WFC01, Edition: September 2026)</u> <u>EFFECTIVE DATE and APPLICATION</u> <u>1. These guidelines shall be enforced from October 01, 2026.</u> <u>2. Notwithstanding the provisions of these guidelines, the provisions then in force shall remain applicable to power plants other than those falling under any of the following.</u> <u>(1) Power plants for which the application for examination pertaining to wind farm certification is accepted on or after November 1, 2026</u> <u>3. Regardless of 1 and 2 above, it should be noted that for provisions, etc., based on the requirements shown below from Chapter 1, 1.1.1-3. of these Guidelines, the application shall be from the effective date of that provision, etc.</u> <u>1) 20140328 Bureau of Commerce No. 1 "Interpretation of Technical Standards for Wind Power Generation Facilities" (revised 20260730 Hokyoku, No. 1)</u>	Revision History I. to III. <i>(Omitted)</i> <i>(Added)</i>

Chapter 1 General

After revision	Before revision												
1.1 General 1.1.1 to 1.1.3 <i>(Omitted)</i>	1.1 General 1.1.1 to 1.1.3 <i>(Omitted)</i>												
1.2 Normative References 1.2.1 General -1. <i>(Omitted)</i> [J-01] JIS C 61400-1:2025: Wind Energy Generation Systems - Part 1: Design requirements [J-02] IEC 61400-1:2019+AMD1:2025: Wind energy generation systems - Part 1: Design requirements [J-03] <i>(Omitted)</i> [J-04] 20140328 Bureau of Commerce No. 1 "Interpretation of Technical Standards for Wind Power Generation Facilities" (<u>Revision 20260730 Hokyoku, No. 1</u>) [J-05] to [J-06] <i>(Omitted)</i> <i>(Deleted)</i> -2. <i>(Omitted)</i> [R-01] NKRE-SP-0003 Wind Farm Certification Procedures, Edition <u>September 2026</u> [R-02] to [R-03] <i>(Omitted)</i> [R-04] Guidebook on Design and Fabrication of High Strength Bolted Connections (Architectural Institute of Japan, <u>2016</u>) [R-05] to [R-15] <i>(Omitted)</i> [R-16] MEASNET Evaluation of Site-Specific Wind Conditions, <u>Version 3, September 2022</u> [R-17] <i>(Omitted)</i>	1.2 Normative References 1.2.1 General -1. <i>(Omitted)</i> [J-01] JIS C 1400-1:2017: Wind Energy Generation Systems - Part 1: Design requirements [J-02] IEC 61400-1:2019: Wind energy generation systems - Part 1: Design requirements [J-03] <i>(Omitted)</i> [J-04] 20140328 Bureau of Commerce No. 1 "Interpretation of Technical Standards for Wind Power Generation Facilities" (<u>Revision 20230310 Bureau No. 2</u>) [J-05] to [J-06] <i>(Omitted)</i> [J-07] 20240318 Hokyoku, No. 3: "<u>Partial Amendment of Interpretation of Technical Standards for Wind Power Generation Facilities</u>" -2. <i>(Omitted)</i> [R-01] NKRE-SP-0003 Wind Farm Certification Procedures, Edition <u>September 2024</u> [R-02] to [R-03] <i>(Omitted)</i> [R-04] Guidebook on Design and Fabrication of High Strength Bolted Connections (Architectural Institute of Japan, <u>2003</u>) [R-05] to [R-15] <i>(Omitted)</i> [R-16] MEASNET Evaluation of Site-Specific Wind Conditions, <u>Version 2, April 2016</u> [R-17] <i>(Omitted)</i>												
1.3 Definitions and abbreviations 1.3.1 Definition of terms -1. <i>(Omitted)</i> Table 1-1 Definition of terms <table> <tr> <th>Term</th><th>Definition</th></tr> <tr> <td><i>(Omitted)</i></td><td><i>(Omitted)</i></td></tr> <tr> <td>Reference wind speed</td><td>The wind speed at hub height used to define the wind</td></tr> </table>	Term	Definition	<i>(Omitted)</i>	<i>(Omitted)</i>	Reference wind speed	The wind speed at hub height used to define the wind	1.3 Definitions and abbreviations 1.3.1 Definition of terms -1. <i>(Omitted)</i> Table 1-1 Definition of terms <table> <tr> <th>Term</th><th>Definition</th></tr> <tr> <td><i>(Omitted)</i></td><td><i>(Omitted)</i></td></tr> <tr> <td>Reference wind speed</td><td>The wind speed at hub height used to define the wind</td></tr> </table>	Term	Definition	<i>(Omitted)</i>	<i>(Omitted)</i>	Reference wind speed	The wind speed at hub height used to define the wind
Term	Definition												
<i>(Omitted)</i>	<i>(Omitted)</i>												
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<i>(Omitted)</i>	<i>(Omitted)</i>												
Reference wind speed	The wind speed at hub height used to define the wind												

After revision			Before revision		
(V_{ref})	turbine class in JIS C 61400-1: 2025 ^[J-01] , which is set as the 10 minutes average wind speed with a return period of 50 years.		(V_{ref})	turbine class in JIS C 1400-1: 2017 ^[J-01] , which is set as the 10 minutes average wind speed with a return period of 50 years.	
<i>(Omitted)</i>	<i>(Omitted)</i>		<i>(Omitted)</i>	<i>(Omitted)</i>	
1.3.2 <i>(Omitted)</i>			1.3.2 <i>(Omitted)</i>		
1.3.3 Meaning and units of symbols			1.3.3 Meaning and units of symbols		
-1. <i>(Omitted)</i>			-1. <i>(Omitted)</i>		
Table 1-3 Definition of symbols			Table 1-3 Definition of symbols		
Symbol	Meaning	Units	Symbol	Meaning	Units
C_{CT}	Turbulent structure <u>correction</u> parameter (See JIS C 61400-1:2025 ^[J-01] 11.2)		C_{CT}	Turbulent structure <u>intensity</u> parameter (See JIS C 1400-1:2017 ^[J-01] 11.2)	
<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>
I_{ref}	<u>Reference value of the turbulence intensity corresponding to the 70% quantile at 15 m/s</u> ^{[J-01], [J-02]}		I_{ref}	<u>Expected value hub height turbulence intensity at a 10 minute average wind speed of 15 m/s</u> ^[J-01] <u>Reference value of the turbulence intensity corresponding to the 70% quantile at 15 m/s</u> ^[J-02]	
<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>
V_{ref}	Reference wind speed (JIS C 61400-1:2025 ^[J-01])	[m/s]	V_{ref}	Reference wind speed (JIS C 1400-1:2017 ^[J-01])	[m/s]
<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>	<i>(Omitted)</i>
1.4 Wind farm certification			1.4 Wind farm certification		
1.4.1 to 1.4.9 <i>(Omitted)</i>			1.4.1 to 1.4.9 <i>(Omitted)</i>		
1.5 Documents to be submitted			1.5 Documents to be submitted		
1.5.1 to 1.5.3 <i>(Omitted)</i>			1.5.1 to 1.5.3 <i>(Omitted)</i>		
1.5.4 Materials related to wind turbine (RNA) design evaluation			1.5.4 Materials related to wind turbine (RNA) design evaluation		
-1. <i>(Omitted)</i>			-1. <i>(Omitted)</i>		
(1) to (7) <i>(Omitted)</i>			(1) to (7) <i>(Omitted)</i>		
(8) <u>Materials summarizing the requirements for installing wind turbines so that they do not come into contact with other structures, vegetation, etc., during operation as specified in Section 5.5.1</u>			<i>(Added)</i>		
(9) <i>(Omitted)</i>			(9) <i>(Omitted)</i>		
(10) <i>(Omitted)</i>			(10) <i>(Omitted)</i>		

After revision	Before revision
(11) (Omitted) 1.5.5 to 1.5.6 (Omitted)	(11) (Omitted) 1.5.5 to 1.5.6 (Omitted)
1.6 Correspondence to the Technical Standards for Wind Power Generation Facilities [Reference] 1.6.1 (Omitted)	1.6 Correspondence to the Technical Standards for Wind Power Generation Facilities [Reference] 1.6.1 (Omitted)

Chapter 2. Site conditions assessment

After revision	Before revision																		
2.1 General	2.1 General																		
2.1.1 (Omitted)	2.1.1 (Omitted)																		
2.2 Wind conditions during power production	2.2 Wind conditions during power production																		
2.2.1 (Omitted)	2.2.1 (Omitted)																		
2.2.2 Measurement data evaluation	2.2.2 Measurement data evaluation																		
-1. to -7. (Omitted)	-1. to -7. (Omitted)																		
-8. The effective data rate of measurement data from remote sensing equipment shall be in accordance with -2. above. However, if the mast measurement data is used as input data for airflow analysis and the measurement data from the remote sensing equipment is only used to verify the validity of the airflow analysis, <u>the effective data rate of the measurement data from the remote sensing equipment need not comply with the provisions of -2. above, provided that it is quantitatively demonstrated that the measurement data from the remote sensing equipment sufficiently captures seasonal variations.</u>	-8. The effective data rate of measurement data from remote sensing equipment shall be in accordance with -2. above. However, if the mast measurement data is used as input data for airflow analysis and the measurement data from the remote sensing equipment is only used to verify the validity of the airflow analysis, <u>then it is not necessary for the effective data rate to be in accordance with the provisions of -2. above, provided that it is quantitatively shown that the effects of seasonality are sufficiently obtained.</u>																		
-9. (Omitted)	-9. (Omitted)																		
Table 2-2 Correlation of measurement data from a measurement mast and remote sensing equipment	Table 2-2 Correlation of measurement data from a measurement mast and remote sensing equipment																		
<table><tr><td>Condition</td><td>Requirements for wind speed</td><td>Requirements for wind direction</td></tr><tr><td>(1)</td><td>(Omitted)</td><td>(Omitted)</td></tr><tr><td>(2)</td><td>(Omitted) (Deleted)</td><td>(Omitted) (Deleted)</td></tr></table>	Condition	Requirements for wind speed	Requirements for wind direction	(1)	(Omitted)	(Omitted)	(2)	(Omitted) (Deleted)	(Omitted) (Deleted)	<table><tr><td>Condition</td><td>Requirements for wind speed</td><td>Requirements for wind direction</td></tr><tr><td>(1)</td><td>(Omitted)</td><td>(Omitted)</td></tr><tr><td>(2)</td><td>(Omitted) <u>*When these requirements are not satisfied, the reason must be quantitatively shown using the results of airflow analysis, etc.</u></td><td>(Omitted) <u>*When these requirements are not satisfied, the reason must be quantitatively shown using the results of airflow analysis, etc.</u></td></tr></table>	Condition	Requirements for wind speed	Requirements for wind direction	(1)	(Omitted)	(Omitted)	(2)	(Omitted) <u>*When these requirements are not satisfied, the reason must be quantitatively shown using the results of airflow analysis, etc.</u>	(Omitted) <u>*When these requirements are not satisfied, the reason must be quantitatively shown using the results of airflow analysis, etc.</u>
Condition	Requirements for wind speed	Requirements for wind direction																	
(1)	(Omitted)	(Omitted)																	
(2)	(Omitted) (Deleted)	(Omitted) (Deleted)																	
Condition	Requirements for wind speed	Requirements for wind direction																	
(1)	(Omitted)	(Omitted)																	
(2)	(Omitted) <u>*When these requirements are not satisfied, the reason must be quantitatively shown using the results of airflow analysis, etc.</u>	(Omitted) <u>*When these requirements are not satisfied, the reason must be quantitatively shown using the results of airflow analysis, etc.</u>																	
2.2.3 Evaluation of topographic complexity	2.2.3 Evaluation of topographic complexity																		
-1. (Omitted)	-1. (Omitted)																		
(1) JIS C 61400-1:2025 ^[J-01] , paragraph 11.2 (Deleted)	(1) JIS C 1400-1:2017 ^[J-01] , paragraph 11.2 (IEC 61400-1 Ed.3.1, 11.2)																		
(2) IEC 61400-1:2019+AMD1:2025 ^[J-02] , 11.2	(2) IEC 61400-1:2019 ^[J-02] , 11.2																		
-2. (Omitted)	-2. (Omitted)																		
2.2.4 to 2.2.5 (Omitted)	2.2.4 to 2.2.5 (Omitted)																		
2.2.6 Calculation of turbulence intensity	2.2.6 Calculation of turbulence intensity																		
-1. For the turbulence intensity by direction at the hub height at the wind turbine position, the site wind condition measurement data and airflow analysis results shall be used to calculate each of the	-1. For the turbulence intensity by direction at the hub height at the wind turbine position, the site wind condition measurement data and airflow analysis results shall be used to calculate each of the																		

After revision	Before revision
turbulence intensities corresponding to the normal turbulence model (NTM) and the extreme turbulence model (ETM) prescribed in JIS C <u>61400-1:2025</u> ^[J-01]. Also, with regards to the wind turbine operation, the effect must be appropriately considered if sector management will be set. -2. to -5. (Omitted) 2.2.7 Evaluation of wind turbine wake effect from adjacent wind turbines -1. to -2. (Omitted) -3. (Omitted) (1) JIS C <u>61400-1:2025</u> ^[J-01], Annex E (Deleted) (2) IEC <u>61400-1:2019+AMD1:2025</u> ^[J-02], Annex E -4. In the case of a large-scale wind farm, for I_{eff}, the case when the Frandsen model is applied based on JIS C <u>61400-1:2025</u> ^[J-01] Annex E shall be compared with the case when the provisions concerning the large-scale wind farm effect are used, and the validity of these shall be verified to judge which method to use for the calculation. 2.2.8 to 2.2.10 (Omitted)	turbulence intensities corresponding to the normal turbulence model (NTM) and the extreme turbulence model (ETM) prescribed in JIS C <u>1400-1:2017</u> ^[J-01]. Also, with regards to the wind turbine operation, the effect must be appropriately considered if sector management will be set. -2. to -5. (Omitted) 2.2.7 Evaluation of wind turbine wake effect from adjacent wind turbines -1. to -2. (Omitted) -3. (Omitted) (1) JIS C <u>1400-1:2017</u> ^[J-01], Annex D (IEC61400-1 Ed.3.1, Annex D) (2) IEC <u>61400-1:2019</u> ^[J-02], Annex E -4. In the case of a large-scale wind farm, for I_{eff}, the case when the Frandsen model is applied based on JIS C <u>1400-1:2017</u> ^[J-01] Annex D shall be compared with the case when the provisions concerning the large-scale wind farm effect are used, and the validity of these shall be verified to judge which method to use for the calculation. 2.2.8 to 2.2.10 (Omitted)
2.3 Wind conditions during parked by storm 2.3.1 Calculation of extreme wind speed and turbulence intensity -1. to -2. (Omitted) -3. If a typhoon simulation is used in the calculation in -1. above, the validity must be sufficiently confirmed by comparing the simulation results (upper air winds due to the hypothetical typhoon) with the measured values (upper air winds calculated from the atmospheric pressure in the typhoon database). If the result of the comparison of the simulation results and the measured values is that the simulation results are an underestimation, additional consideration must be given to the effects of uncertainty related to the number of years of analysis and the number of years of atmospheric pressure measurement. <u>In addition, the wind direction to be verified shall be set in accordance with C.3.1-5, and its validity shall be sufficiently verified.</u> -4. (Omitted) -5. For the 10 minutes average wind speed with a return period of 1 year U_1, in accordance with JIS C <u>61400-1:2025</u> ^[J-01], the value used shall be 0.8 times the 10 minutes average wind speed with a return period of 50 years U_h. In addition, instead of this, a calculated value based on long-term measurement data, etc., may also be used. However, in that case, the validity of the measurement data itself and the validity of the analysis method, etc., must be sufficiently shown.	2.3 Wind conditions during parked by storm 2.3.1 Calculation of extreme wind speed and turbulence intensity -1. to -2. (Omitted) -3. If a typhoon simulation is used in the calculation in -1. above, the validity must be sufficiently confirmed by comparing the simulation results (upper air winds due to the hypothetical typhoon) with the measured values (upper air winds calculated from the atmospheric pressure in the typhoon database). If the result of the comparison of the simulation results and the measured values is that the simulation results are an underestimation, additional consideration must be given to the effects of uncertainty related to the number of years of analysis and the number of years of atmospheric pressure measurement. <u>In addition, the validity of the setting of the wind direction to be verified must be sufficiently confirmed.</u> -4. (Omitted) -5. For the 10 minutes average wind speed with a return period of 1 year U_1, in accordance with JIS C <u>1400-1:2017</u> ^[J-01], the value used shall be 0.8 times the 10 minutes average wind speed with a return period of 50 years U_h. In addition, instead of this, a calculated value based on long-term measurement data, etc., may also be used. However, in that case, the validity of the measurement data itself and the validity of the analysis method, etc., must be sufficiently shown.

After revision	Before revision
-6. (Omitted) (1) (Omitted) (2) The wind shear exponent corresponding to the 10 minutes average wind speed with a return period of 50 years as specified in JIS C <u>61400-1:2025</u>^[J-01] (3) (Omitted) 2.3.2 (Omitted)	-6. (Omitted) (1) (Omitted) (2) The wind shear exponent corresponding to the 10 minutes average wind speed with a return period of 50 years as specified in JIS C <u>1400-1:2017</u>^[J-01] (3) (Omitted) 2.3.2 (Omitted)
2.4 Geotechnical and earthquake conditions 2.4.1 General -1. (Omitted) (1) (Omitted) (2) Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04](Deleted) (3) (Omitted) -2. to -3. (Omitted)	2.4 Geotechnical and earthquake conditions 2.4.1 General -1. (Omitted) (1) (Omitted) (2) Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04]<u>[J-07]</u> (3) (Omitted) -2. to -3. (Omitted)
2.5 Lightning environment conditions 2.5.1 (Omitted)	2.5 Lightning environment conditions 2.5.1 (Omitted)
2.6 Other environmental conditions 2.6.1 (Omitted)	2.6 Other environmental conditions 2.6.1 (Omitted)

Chapter 3. Design basis evaluation

After revision	Before revision
3.1 General	3.1 General
3.1.1 <i>(Omitted)</i>	3.1.1 <i>(Omitted)</i>
3.2 Design basis requirements	3.2 Design basis requirements
3.2.1 <i>(Omitted)</i>	3.2.1 <i>(Omitted)</i>
3.2.2 Wind turbine (RNA) design basis	3.2.2 Wind turbine (RNA) design basis
-1. <i>(Omitted)</i>	-1. <i>(Omitted)</i>
(1) to (8) <i>(Omitted)</i>	(1) to (8) <i>(Omitted)</i>
(9) Duration of the simulation <i>(Deleted)</i>	(9) Duration of the simulation <u>and its time</u>
(10) to (11) <i>(Omitted)</i>	(10) to (11) <i>(Omitted)</i>
3.2.3 Support structure design basis	3.2.3 Support structure design basis
-1. The document which shows the design basis for the support structure (tower) shall describe how the following matters were decided. For the design basis for the support structure (Tower), it should be noted that there must be compliance with Articles 10, 11 and 12 of the Interpretation of Technical Standards for Wind Power Generation Facilities ^[J-04] <i>(Deleted)</i> .	-1. The document which shows the design basis for the support structure (tower) shall describe how the following matters were decided. For the design basis for the support structure (Tower), it should be noted that there must be compliance with Articles 10, 11 and 12 of the Interpretation of Technical Standards for Wind Power Generation Facilities ^[J-04] <u>[J-07]</u> .
(1) to (7) <i>(Omitted)</i>	(1) to (7) <i>(Omitted)</i>
-2. Regarding the design basis for the support structure (foundation), in principle, it is acceptable to follow the regulations in the Guidelines for Design of Wind Turbine Support Structures and Foundation ^[J-05] . For the design basis for the support structure (foundation), it should be noted that there must be compliance with Articles 10, 11 and 12 of the Interpretation of Technical Standards for Wind Power Generation Facilities ^[J-04] <i>(Deleted)</i> .	-2. Regarding the design basis for the support structure (foundation), in principle, it is acceptable to follow the regulations in the Guidelines for Design of Wind Turbine Support Structures and Foundation ^[J-05] . For the design basis for the support structure (foundation), it should be noted that there must be compliance with Articles 10, 11 and 12 of the Interpretation of Technical Standards for Wind Power Generation Facilities ^[J-04] <u>[J-07]</u> .

Chapter 4. Integrated load analysis evaluation

After revision	Before revision
4.1 General 4.1.1 <i>(Omitted)</i>	4.1 General 4.1.1 <i>(Omitted)</i>
4.2 Requirements for load analysis for RNA and tower evaluation 4.2.1 Comparison of the site conditions and the design values set in the type certification -1. <i>(Omitted)</i> -2. In the confirmation of -1. above, it is necessary to follow JIS C <u>61400-1:2025</u>^[J-01] 11.9 and compare the site-specific design conditions with the design values set in the type certification, based on the site conditions specified in Chapter 2. Of the site conditions specified in Chapter 2, for the turbulence intensity, the value obtained by multiplying the principal direction component of I_{eff} specified in 2.2.7 (or I_{rep} specified in 2.2.6 if there is no adjacent wind turbine), by the C_{CT} specified in 2.2.3 must be compared with the principal direction component of the turbulence intensity set in the type certification for each wind speed bin. -3. <i>(Omitted)</i> 4.2.2 <i>(Omitted)</i>	4.2 Requirements for load analysis for RNA and tower evaluation 4.2.1 Comparison of the site conditions and the design values set in the type certification -1. <i>(Omitted)</i> -2. In the confirmation of -1. above, it is necessary to follow JIS C <u>1400-1:2017</u>^[J-01] 11.9 and compare the site-specific design conditions with the design values set in the type certification, based on the site conditions specified in Chapter 2. Of the site conditions specified in Chapter 2, for the turbulence intensity, the value obtained by multiplying the principal direction component of I_{eff} specified in 2.2.7 (or I_{rep} specified in 2.2.6 if there is no adjacent wind turbine), by the C_{CT} specified in 2.2.3 must be compared with the principal direction component of the turbulence intensity set in the type certification for each wind speed bin. -3. <i>(Omitted)</i> 4.2.2 <i>(Omitted)</i>
4.3 Requirements for load analysis for support structure evaluation 4.3.1 General -1. <i>(Omitted)</i> (1) <i>(Omitted)</i> (2) Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04]<i>(Deleted)</i> (3) <i>(Omitted)</i> 4.3.2 Support structure load analysis -1. In addition to the load calculated in 4.3.1-1., the loading data for the foundation and the tower design load at the site shall be set with appropriate consideration of the load applied to the tower at the time of the type certification, and the site load on the tower that was calculated based on the site conditions specified in 4.2.2. <u>In this case, the loading data for the foundation and the tower design load at the site shall be set so that they are consistent with each other.</u> -2. to -3. <i>(Omitted)</i> -4. When equivalent linear analysis is carried out in the seismic response analysis, if the shearing strain is <u>1% or greater</u> in the results, then it is not possible to apply the response calculation flow for liquefied ground that is described in the Guidelines for Design of Wind Turbine Support Structures and	4.3 Requirements for load analysis for support structure evaluation 4.3.1 General -1. <i>(Omitted)</i> (1) <i>(Omitted)</i> (2) Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04]<u>[J-07]</u> (3) <i>(Omitted)</i> 4.3.2 Support structure load analysis -1. In addition to the load calculated in 4.3.1-1., the loading data for the foundation and the tower design load at the site shall be set with appropriate consideration of the load applied to the tower at the time of the type certification, and the site load on the tower that was calculated based on the site conditions specified in 4.2.2. <i>(Added)</i> -2. to -3. <i>(Omitted)</i> -4. When equivalent linear analysis is carried out in the seismic response analysis, if the shearing strain <u>exceeds 1%</u> in the results, then it is not possible to apply the response calculation flow for liquefied ground that is described in the Guidelines for Design of Wind Turbine Support Structures and

After revision	Before revision
Foundation^[J-05] (p. 170, Illustration 5.11). In this case, it should be noted that it is necessary to use an alternative method such as effective stress analysis. -5. The handling of wind and wind turbine control loads combined with the seismic loads obtained from the results of seismic response analysis must follow the Appended Table 3 of the Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04] <i>(Deleted)</i>. <i>(Deleted)</i>The specific method for combining the seismic load and the wind and wind turbine control loads may be carried out in accordance with Paragraph 5.5.4 of the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05]. When coupled analysis simultaneously considering both the seismic and the wind and wind turbine control loads is performed, this shall be approved as appropriate by ClassNK. -6. In the case of pile foundations, if ground springs and attenuation are set using the thin layer method, etc., and not by following the provisions of the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05], the validity of the setting <u>shall</u> be appropriately indicated in accordance with Annex G.4.	Foundation^[J-05] (p. 170, Illustration 5.11). In this case, it should be noted that it is necessary to use an alternative method such as effective stress analysis. -5. The handling of wind and wind turbine control loads combined with the seismic loads obtained from the results of seismic response analysis must follow the Appended Table 3 of the Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04], [J-07]. <u>Although the handling of the wind and wind turbine control loads shall be as described above,</u> the specific method for combining the seismic load and the wind and wind turbine control loads may be carried out in accordance with Paragraph 5.5.4 of the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05]. When coupled analysis simultaneously considering both the seismic and the wind and wind turbine control loads is performed, this shall be approved as appropriate by ClassNK. -6. In the case of pile foundations, if ground springs and attenuation are set using the thin layer method, etc., and not by following the provisions of the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05], the validity of the setting <u>should</u> be appropriately indicated in accordance with Annex G.4.

Chapter 5. Wind turbine (RNA) design evaluation

After revision	Before revision																								
5.1 General 5.1.1 (Omitted)	5.1 General 5.1.1 (Omitted)																								
5.2 Wind turbine (RNA) design evaluation 5.2.1 to 5.2.2 (Omitted)	5.2 Wind turbine (RNA) design evaluation 5.2.1 to 5.2.2 (Omitted)																								
5.3 Nacelle cover strength evaluation 5.3.1 (Omitted) 5.3.2 Wind load on the nacelle cover -1. The <u>wind load</u> for the nacelle cover shall be calculated by using equation (5.1). (Omitted) 5.3.3 Load cases -1. to -2. (Omitted)	5.3 Nacelle cover strength evaluation 5.3.1 (Omitted) 5.3.2 Wind load on the nacelle cover -1. The <u>wind load factor</u> for the nacelle cover shall be calculated by using equation (5.1). (Omitted) 5.3.3 Load cases -1. to -2. (Omitted)																								
Table 5-2 Load cases to be applied to the nacelle cover load calculation	Table 5-2 Load cases to be applied to the nacelle cover load calculation																								
<table><tr><td>No.</td><td>$\hat{C}_{em}$</td><td>$\hat{C}_{em}$ Wind direction to be taken into consideration in the calculation</td><td>Wind speed</td><td>Turbulence intensity</td><td>Partial safety factor for wind loads</td></tr><tr><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td></tr></table>	No.	$\hat{C}_{em}$	$\hat{C}_{em}$ Wind direction to be taken into consideration in the calculation	Wind speed	Turbulence intensity	Partial safety factor for wind loads	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	<table><tr><td>No.</td><td>$\hat{C}_{em}$</td><td>$\hat{C}_{em}$ Wind direction to be taken into consideration in the calculation</td><td>Wind speed</td><td>Turbulence intensity</td><td>Partial safety factor for wind loads</td></tr><tr><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td><td>(Omitted)</td></tr></table>	No.	$\hat{C}_{em}$	$\hat{C}_{em}$ Wind direction to be taken into consideration in the calculation	Wind speed	Turbulence intensity	Partial safety factor for wind loads	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
No.	$\hat{C}_{em}$	$\hat{C}_{em}$ Wind direction to be taken into consideration in the calculation	Wind speed	Turbulence intensity	Partial safety factor for wind loads																				
(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)																				
No.	$\hat{C}_{em}$	$\hat{C}_{em}$ Wind direction to be taken into consideration in the calculation	Wind speed	Turbulence intensity	Partial safety factor for wind loads																				
(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)																				
*1: Corresponds to the wind direction to be considered in DLC6.1 specified in JIS C <u>61400-1:2025</u> ^[J-01] *2: Corresponds to the wind direction to be considered in DLC6.2 specified in JIS C <u>61400-1:2025</u> ^[J-01] 5.3.4 (Omitted)	*1: Corresponds to the wind direction to be considered in DLC6.1 specified in JIS C <u>1400-1:2017</u> ^[J-01] *2: Corresponds to the wind direction to be considered in DLC6.2 specified in JIS C <u>1400-1:2017</u> ^[J-01] 5.3.4 (Omitted)																								
5.4 Evaluation in the event of the electrical power network loss 5.4.1 General -1. (Omitted) -2. Regarding -1. (2) above, it shall be ensured as a design load case to be applied to the integrated load analysis by considering the DLC6.2 specified in JIS C <u>61400-1:2025</u> ^[J-01] . -3. to -4. (Omitted) 5.4.2 Power back-up -1. (Omitted) (1) (Omitted) (2) Whichever is the largest of the yaw misalignment design value obtained from the results of (1)	5.4 Evaluation in the event of the electrical power network loss 5.4.1 General -1. (Omitted) -2. Regarding -1. (2) above, it shall be ensured as a design load case to be applied to the integrated load analysis by considering the DLC6.2 specified in JIS C <u>1400:2017</u> ^[J-01] . -3. to -4. (Omitted) 5.4.2 Power back-up -1. (Omitted) (1) (Omitted) (2) Whichever is the largest of the yaw misalignment design value obtained from the results of (1)																								

After revision	Before revision
above and $\pm 8^\circ$ must be adopted as the yaw error parameter in the DLC6.1 specified in JIS C <u>61400-1:2025</u>^[J-01] among the design load cases used in the integrated load analysis specified in Chapter 4. (3) to (4) <i>(Omitted)</i> -2. to -5. <i>(Omitted)</i>	above and $\pm 8^\circ$ must be adopted as the yaw error parameter in the DLC6.1 specified in JIS C <u>1400:2017</u>^[J-01] among the design load cases used in the integrated load analysis specified in Chapter 4. (3) to (4) <i>(Omitted)</i> -2. to -5. <i>(Omitted)</i>
5.5 Evaluation to secure a safe state on the wind turbine 5.5.1 <i>(Omitted)</i> 5.5.2 Safe and automatic shutdown of wind turbines -1. Even in the following cases, there shall be a function to stop safely and automatically, and also the safe state after stopping shall be maintained. It should be noted that for these items, it is necessary to conform to Article 7 of the Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04]<i>(Deleted)</i>. (1) to (2) <i>(Omitted)</i> -2. <i>(Omitted)</i> 5.5.3 Protection against lightning strikes -1. to -2. <i>(Omitted)</i> -3. <i>(Omitted)</i> (1) Regions enclosed by (a) lines in Figure 2-1 (a) to (b) <i>(Omitted)</i> (c) A down conductor, etc., through which the current generated by a lightning strike can flow safely into the ground without damaging the wind turbine must be provided. <u>When using conductive materials, such as carbon fiber-reinforced plastic, for the blade, ensure that these materials are properly electrically connected to the down conductor and other components.</u> (d) <u>Measures shall be taken -such as installing lightning strike detection systems, surveillance cameras, and utilizing meteorological data- to ensure that the occurrence of lightning strikes on wind turbines can be monitored at all times. If these measures fail to detect a lightning strike on a wind turbine, an inspection using an endoscope inside the blade or other methods shall be conducted to confirm whether damage from a lightning strike has occurred. Furthermore, while the wind turbine is in operation, a lightning detection system, etc., that can be used to stop the wind turbine immediately in the event of lightning striking the wind turbine must be provided.</u> (2) to (4) <i>(Omitted)</i>	5.5 Evaluation to secure a safe state on the wind turbine 5.5.1 <i>(Omitted)</i> 5.5.2 Safe and automatic shutdown of wind turbines -1. Even in the following cases, there shall be a function to stop safely and automatically, and also the safe state after stopping shall be maintained. It should be noted that for these items, it is necessary to conform to Article 7 of the Interpretation of Technical Standards for Wind Power Generation Facilities^[J-04]<u>[J-07]</u>. (1) to (2) <i>(Omitted)</i> -2. <i>(Omitted)</i> 5.5.3 Protection against lightning strikes -1. to -2. <i>(Omitted)</i> -3. <i>(Omitted)</i> (1) Regions enclosed by (a) lines in Figure 2-1 (a) to (b) <i>(Omitted)</i> (c) A down conductor, etc., through which the current generated by a lightning strike can flow safely into the ground without damaging the wind turbine must be provided. <i>(Added)</i> (d) <i>(Added)</i> A lightning detection system, etc., that can be used to stop the wind turbine immediately in the event of lightning striking the wind turbine must be provided. (2) to (4) <i>(Omitted)</i>

After revision	Before revision
-4. to -5. (Omitted)	-4. to -5. (Omitted)

Chapter 6. Support structure design evaluation

After revision	Before revision
6.1 General 6.1.1 General -1. <i>(Omitted)</i> -2. <i>(Omitted)</i> (1) <i>(Omitted)</i> (2) Interpretation of Technical Standards for Wind Power Generation Facilities ^[J-04] <i>(Deleted)</i> (3) to (4) <i>(Omitted)</i> -3. to -5. <i>(Omitted)</i>	6.1 General 6.1.1 General -1. <i>(Omitted)</i> -2. <i>(Omitted)</i> (1) <i>(Omitted)</i> (2) Interpretation of Technical Standards for Wind Power Generation Facilities ^[J-04] <u>[J-07]</u> (3) to (4) <i>(Omitted)</i> -3. to -5. <i>(Omitted)</i>
6.2 Support structure (Tower) 6.2.1 <i>(Omitted)</i>	6.2 Support structure (Tower) 6.2.1 <i>(Omitted)</i>
6.3 Support structure (Foundation) 6.3.1 to 6.3.3 <i>(Omitted)</i>	6.3 Support structure (Foundation) 6.3.1 to 6.3.3 <i>(Omitted)</i>

Annex A. Measurement data evaluation methods [normative]

After revision	Before revision
A.1 to A.4 <i>(Omitted)</i>	A.1 to A.4 <i>(Omitted)</i>
A.5 Measurements and evaluation report of measurement results -1. <i>(Omitted)</i> (1) Site status: a. Photographs showing 360° around <u>each measurement location, taken from ground level, showing the surrounding vegetation conditions</u> b. to d. <i>(Omitted)</i> <u>c. Rationale for the selection of measurement locations</u> (2) to (3) <i>(Omitted)</i> -2. <i>(Omitted)</i> (1) <i>(Omitted)</i> (2) Wind direction and wind speed data: a. to c. <i>(Omitted)</i> d. When the required values shown in Table 2-2 are not satisfied in c. above, the results of consideration of the reason why the required values were not satisfied, following the notes shown in <u>2.2.2-9.</u> (3) to (7) <i>(Omitted)</i>	A.5 Measurements and evaluation report of measurement results -1. <i>(Omitted)</i> (1) Site status: a. Photographs showing 360° around <u>the measurement points, from all the measurement points</u> b. to d. <i>(Omitted)</i> <i>(Added)</i> (2) to (3) <i>(Omitted)</i> -2. <i>(Omitted)</i> (1) <i>(Omitted)</i> (2) Wind direction and wind speed data: a. to c. <i>(Omitted)</i> d. When the required values shown in Table 2-2 are not satisfied in c. above, the results of consideration of the reason why the required values were not satisfied, following the notes shown in <u>Table 2-2.</u> (3) to (7) <i>(Omitted)</i>
A.6 to A.7 <i>(Omitted)</i>	A.6 to A.7 <i>(Omitted)</i>

Annex B Airflow analysis and verification of its validity [normative]

After revision	Before revision
B.1 to B.2 <i>(Omitted)</i>	B.1 to B.2 <i>(Omitted)</i>
B.3 Report on airflow analysis and its validity B.3.1 <i>(Omitted)</i> B.3.2 Report on the airflow analysis applied to the wind conditions during parked by storm and its validity -1. <i>(Omitted)</i> (1) Details of the airflow analysis (including the following content): a. to c. <i>(Omitted)</i> d. The following items when a method that considers the wind directional characteristics shown in C.3.1-4. (2) is applied 1) to 2) <i>(Omitted)</i> <u>3) Method for determining the wind directions to be verified</u> (2) Results of validity verification (including the following content): a. to c. <i>(Omitted)</i> d. The following items when a method that considers the wind directional characteristics shown in C.3.1-4. (2) is applied 1) to 2) <i>(Omitted)</i> 3) <i>(Deleted)</i> e. <i>(Omitted)</i>	B.3 Report on airflow analysis and its validity B.3.1 <i>(Omitted)</i> B.3.2 Report on the airflow analysis applied to the wind conditions during parked by storm and its validity -1. <i>(Omitted)</i> (1) Details of the airflow analysis (including the following content): a. to c. <i>(Omitted)</i> d. The following items when a method that considers the wind directional characteristics shown in C.3.1-4. (2) is applied 1) to 2) <i>(Omitted)</i> <i>(Added)</i> (2) Results of validity verification (including the following content): a. to c. <i>(Omitted)</i> d. The following items when a method that considers the wind directional characteristics shown in C.3.1-4. (2) is applied 1) to 2) <i>(Omitted)</i> 3) <u>Figure showing the validity of the setting of the wind direction to be verified</u> e. <i>(Omitted)</i>

Annex C Evaluation method for wind conditions [informative /partially normative]

After revision	Before revision
C.1 to C.2 (Omitted)	C.1 to C.2 (Omitted)
C.3 Wind conditions during parked by storm	C.3 Wind conditions during parked by storm
C.3.1 Calculation method for extreme wind speed (10 minutes average wind speed with a return period of 50 years)	C.3.1 Calculation method for extreme wind speed (10 minutes average wind speed with a return period of 50 years)
-1. to -3. (Omitted)	-1. to -3. (Omitted)
-4. (Omitted)	-4. (Omitted)
(1) (Omitted)	(1) (Omitted)
(2) Method that considers the wind directional characteristics	(2) Method that considers the wind directional characteristics
The topographic multiplier for the average wind speed E_{IV} is decided by the equation (C.17) based on the results of typhoon simulations for the wind turbine construction site. Here, $U_{50}(x, y, H_h)$ is the expected annual maximum wind speed with a return period of 50 years at the hub height H_h at the wind turbine construction site, which is obtained by statistical analysis from the result of the typhoon simulation, and $U_{50}^P(x, y, H_h)$ is the expected annual maximum wind speed with a return period of 50 years at the hub height above flat terrain of the ground surface roughness classification. In addition, the wind direction to be verified θ_d shall be the wind direction corresponding to $U_{50}(x, y, H_h)$. The validity of the simulation results must be sufficiently confirmed by comparing them with the measured values. Further, if the comparison of the typhoon simulation results (upper air winds due to the hypothetical typhoon) with the measured values (upper air winds calculated from the atmospheric pressure in the typhoon database) indicates that the simulation results are an underestimation, additional consideration must be given to the effects of uncertainty related to the number of years of analysis and the number of years of atmospheric pressure measurement. <u>In addition, the wind direction to be verified shall be set in accordance with C.3.1-5, and its validity shall be sufficiently verified.</u>	The topographic multiplier for the average wind speed E_{IV} is decided by the equation (C.17) based on the results of typhoon simulations for the wind turbine construction site. Here, $U_{50}(x, y, H_h)$ is the expected annual maximum wind speed with a return period of 50 years at the hub height H_h at the wind turbine construction site, which is obtained by statistical analysis from the result of the typhoon simulation, and $U_{50}^P(x, y, H_h)$ is the expected annual maximum wind speed with a return period of 50 years at the hub height above flat terrain of the ground surface roughness classification. In addition, the wind direction to be verified θ_d shall be the wind direction corresponding to $U_{50}(x, y, H_h)$. The validity of the simulation results must be sufficiently confirmed by comparing them with the measured values. Further, if the comparison of the typhoon simulation results (upper air winds due to the hypothetical typhoon) with the measured values (upper air winds calculated from the atmospheric pressure in the typhoon database) indicates that the simulation results are an underestimation, additional consideration must be given to the effects of uncertainty related to the number of years of analysis and the number of years of atmospheric pressure measurement. <u>In addition, the validity of the setting of the wind direction to be verified must be sufficiently confirmed.</u>
(Omitted)	(Omitted)

After revision	Before revision
ground surface roughness classification by using equation (C.20). Here, H_h is the hub height (m), and Z_b, Z_G and α are parameters indicating the vertical distribution of wind speed and are defined by Table C.2 according to the ground surface roughness classification. The turbulence intensity at height Z is obtained by substituting Z for H_h in equation (C.20). $I_p = \begin{cases} 0.1 \left(\frac{H_h}{Z_G} \right)^{-\alpha-0.05} & Z_b < H_h \leq Z_G \\ 0.1 \left(\frac{Z_b}{Z_G} \right)^{-\alpha-0.05} & H_h \leq Z_b \end{cases} \quad (C.20)$ -3. The correction coefficient for the turbulence intensity due to the terrain E_{tl} is determined by the equation (C.21). Of the methods shown in C.3.1-4., if the method selected is (1) Method that does not consider the wind directional characteristics, then $E'_{tv}(\theta_d)$ is obtained by equation (C.16), and if the method selected is (2) Method that considers the wind directional characteristics, then it is obtained by equation (C.22). Here, $U(x, y, H_h, \theta)$ is the average wind speed obtained by airflow analysis for wind direction θ at hub height H_h at the wind turbine construction site on the actual terrain, and $U^P(x, y, H_h)$ is the average wind speed at the hub height H_h at the wind turbine construction site that was obtained by airflow analysis for flat terrain of ground surface roughness classification P. $E_{tl} = \max \left(E_{ts}(\theta_d) / E'_{tv}(\theta_d), 1 \right) \quad (C.21)$ $E'_{tv}(\theta_d) = \frac{U(x, y, H_h, \theta_d)}{U^P(x, y, H_h)} \quad (C.22)$ -4. The correction coefficient for the fluctuating wind speed due to the terrain E_{ts} is determined by equation (C.23) regardless of whether the method selected is (1) Method that does not consider the wind directional characteristics or (2) Method that considers the wind directional characteristics in C.3.1-4. Here, $\sigma_u(x, y, H_h, \theta_d)$ is the standard deviation of the wind speed fluctuation in the principal wind direction at the hub height	ground surface roughness classification by using equation (C.17). Here, H_h is the hub height (m), and Z_b, Z_G and α are parameters indicating the vertical distribution of wind speed and are defined by Table C.2 according to the ground surface roughness classification. The turbulence intensity at height Z is obtained by substituting Z for H_h in equation (C.19). $I_p = \begin{cases} 0.1 \left(\frac{H_h}{Z_G} \right)^{-\alpha-0.05} & Z_b < H_h \leq Z_G \\ 0.1 \left(\frac{Z_b}{Z_G} \right)^{-\alpha-0.05} & H_h \leq Z_b \end{cases} \quad (C.19)$ -3. The correction coefficient for the turbulence intensity due to the terrain E_{tl} is determined by the equation (C.20). Of the methods shown in C.3.1-4., if the method selected is (1) Method that does not consider the wind directional characteristics, then $E'_{tv}(\theta_d)$ is obtained by equation (C.16), and if the method selected is (2) Method that considers the wind directional characteristics, then it is obtained by equation (C.21). Here, $U(x, y, H_h, \theta)$ is the average wind speed obtained by airflow analysis for wind direction θ at hub height H_h at the wind turbine construction site on the actual terrain, and $U^P(x, y, H_h)$ is the average wind speed at the hub height H_h at the wind turbine construction site that was obtained by airflow analysis for flat terrain of ground surface roughness classification P. $E_{tl} = \max \left(E_{ts}(\theta_d) / E'_{tv}(\theta_d), 1 \right) \quad (C.20)$ $E'_{tv}(\theta_d) = \frac{U(x, y, H_h, \theta_d)}{U^P(x, y, H_h)} \quad (C.21)$ -4. The correction coefficient for the fluctuating wind speed due to the terrain E_{ts} is determined by equation (C.22) regardless of whether the method selected is (1) Method that does not consider the wind directional characteristics or (2) Method that considers the wind directional characteristics in C.3.1-4. Here, $\sigma_u(x, y, H_h, \theta_d)$ is the standard deviation of the wind speed fluctuation in the principal wind direction at the hub height

After revision	Before revision
H_h in the wind direction to be verified on the actual terrain θ_d, and $\sigma_u^P(x, y, H_h)$ is the standard deviation of the wind speed fluctuation in the principal wind direction at the hub height H_h on flat terrain with a ground surface roughness classification P, which are obtained from airflow analysis. $E_{ts}(\theta_d) = \frac{\sigma_u(x, y, H_h, \theta_d)}{\sigma_u^P(x, y, H_h)} \quad (C.23)$	H_h in the wind direction to be verified on the actual terrain θ_d, and $\sigma_u^P(x, y, H_h)$ is the standard deviation of the wind speed fluctuation in the principal wind direction at the hub height H_h on flat terrain with a ground surface roughness classification P, which are obtained from airflow analysis. $E_{ts}(\theta_d) = \frac{\sigma_u(x, y, H_h, \theta_d)}{\sigma_u^P(x, y, H_h)} \quad (C.22)$
-5. In order to obtain the standard deviation of the wind speed fluctuation in the principal wind direction σ_u from airflow analysis, it is also possible to calculate it by using equation (C.25) after using equation (C.24) to calculate the standard deviation of the wind speed fluctuation in the principal wind direction caused by the terrain and the surface roughness σ_u^{surf} from the turbulent flow energy k in the <i>k-epsilon</i> model, etc. However, in this case, the background turbulence intensity I_a shall be 0.1. $\sigma_u^{surf} = \sqrt{1.2k} \quad (C.24)$ $\sigma_u = U \times \sqrt{\left(\frac{\sigma_u^{surf}}{U}\right)^2 + I_a^2} \quad (C.25)$	-5. In order to obtain the standard deviation of the wind speed fluctuation in the principal wind direction σ_u from airflow analysis, it is also possible to calculate it by using equation (C.24) after using equation (C.23) to calculate the standard deviation of the wind speed fluctuation in the principal wind direction caused by the terrain and the surface roughness σ_u^{surf} from the turbulent flow energy k in the <i>k-epsilon</i> model, etc. However, in this case, the background turbulence intensity I_a shall be 0.1. $\sigma_u^{surf} = \sqrt{1.2k} \quad (C.23)$ $\sigma_u = U \times \sqrt{\left(\frac{\sigma_u^{surf}}{U}\right)^2 + I_a^2} \quad (C.24)$
C.3.2.2 Calculation method for 3 seconds average wind speed -1. The extreme 3 seconds average wind speed at hub height with a return period of 50 years U_{e50} is calculated by equation (C.26) by using the U_h calculated using equation (C.14). $U_{e50} = G_f U_h \quad (C.26)$ Where: $G_f = 1 + 3.5I_{h1}$ *Reference: In IEC61400-1:2019+AMD1:2025^[J-02], $G_f \cong 1.4$ is used as $I_{h1} = 0.11$. C.3.2.3 (Omitted) C.3.3 (Omitted)	C.3.2.2 Calculation method for 3 seconds average wind speed -1. The extreme 3 seconds average wind speed at hub height with a return period of 50 years U_{e50} is calculated by equation (C.25) by using the U_h calculated using equation (C.14). $U_{e50} = G_f U_h \quad (C.25)$ Where: $G_f = 1 + 3.5I_{h1}$ *Reference: In IEC61400-1:2019^[J-02], $G_f \cong 1.4$ is used as $I_{h1} = 0.11$. C.3.2.3 (Omitted) C.3.3 (Omitted)
C.4 Reports on wind conditions C.4.1 (Omitted) C.4.2 Report on wind conditions during parked by storm -1. (Omitted)	C.4 Reports on wind conditions C.4.1 (Omitted) C.4.2 Report on wind conditions during parked by storm -1. (Omitted)

After revision	Before revision
-2. For the parameters defined in this Annex that are used for the calculation of each of the values in -1 above, all of the values by direction shall be shown, and it <u>shall</u> be possible to appropriately confirm the setting of the wind direction to be verified <u>in accordance with C.3.1-5</u> and its calculation process. -3. (Omitted) C.4.3 (Omitted)	-2. For the parameters defined in this Annex that are used for the calculation of each of the values in -1 above, all of the values by direction shall be shown, and it <u>must</u> be possible to appropriately confirm the setting of the wind direction to be verified (<i>Added</i>) and its calculation process. -3. (Omitted) C.4.3 (Omitted)
C.5 (Omitted)	C.5 (Omitted)

Annex D Equivalent wind pressure coefficient for the nacelle cover [informative]

After revision	Before revision
D.1 to D.4 <i>(Omitted)</i>	D.1 to D.4 <i>(Omitted)</i>

Annex E Measurement testing for fluctuating pressure characteristics acting on a nacelle surface [informative]

After revision	Before revision
E.1 to E.4 <i>(Omitted)</i>	E.1 to E.4 <i>(Omitted)</i>

Annex F Design methodologies for tower structures [normative]

After revision	Before revision
F.1 to F.9 <i>(Omitted)</i>	F.1 to F.9 <i>(Omitted)</i>

Annex G Design methodologies for foundations [normative]

After revision	Before revision
G.1 to G.2 (Omitted)	G.1 to G.6 (Omitted)
G.3 Handling of seismic response analysis for the ground -1. If the shearing strain <u>is 1% or greater</u> in the results of the seismic response analysis for the ground, then it is not permitted to follow the response calculation flow for liquefied ground that is described in the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05] (p. 170, Illustration 5.11), so at the point, it is not permitted to apply equivalent linear analysis, or simplified liquefaction analysis in which the equivalent stiffness of the liquefied layer multiplied by the stiffness reduction rate is set. -2. to -3. (Omitted) -4. If the shearing strain <u>is less than 1%</u> in the results of the seismic response analysis for the ground, but the response calculation flow for liquefied ground that is described in the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05] (p. 170, Illustration 5.11) is not followed and sequential nonlinear - effective stress analysis is applied, then the validity of the analysis results must be shown. (Example: For representative cases, perform comparisons of the equivalent linear analysis, and simplified liquefaction analysis in which the equivalent stiffness of the liquefied layer multiplied by the stiffness reduction rate is set.) -5. When the inclination of the engineering base surface <u>exceeds 5 degrees</u>, the existence of effects from the inclination of the engineering base surface must be checked. (Example: Perform seismic response analysis using the ground response at the wind turbine site that was evaluated by finite element analysis (2-D), and then perform a comparison with the seismic response analysis results evaluated using the ground response of a 1-D parallel stratified ground at the time of design.)	G.3 Handling of seismic response analysis for the ground -1. If the shearing strain <u>exceeds 1%</u> in the results of the seismic response analysis for the ground, then it is not permitted to follow the response calculation flow for liquefied ground that is described in the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05] (p. 170, Illustration 5.11), so at the point, it is not permitted to apply equivalent linear analysis, or simplified liquefaction analysis in which the equivalent stiffness of the liquefied layer multiplied by the stiffness reduction rate is set. -2. to -3. (Omitted) -4. If the shearing strain <u>does not exceed 1%</u> in the results of the seismic response analysis for the ground, but the response calculation flow for liquefied ground that is described in the Guidelines for Design of Wind Turbine Support Structures and Foundation^[J-05] (p. 170, Illustration 5.11) is not followed and sequential nonlinear - effective stress analysis is applied, then the validity of the analysis results must be shown. (Example: For representative cases, perform comparisons of the equivalent linear analysis, and simplified liquefaction analysis in which the equivalent stiffness of the liquefied layer multiplied by the stiffness reduction rate is set.) -5. When the inclination of the engineering base surface <u>is 5 degrees or more</u>, the existence of effects from the inclination of the engineering base surface must be checked. (Example: Perform seismic response analysis using the ground response at the wind turbine site that was evaluated by finite element analysis (2-D), and then perform a comparison with the seismic response analysis results evaluated using the ground response of a 1-D parallel stratified ground at the time of design.)
G.4 to G.6 (Omitted)	G.4 to G.6 (Omitted)