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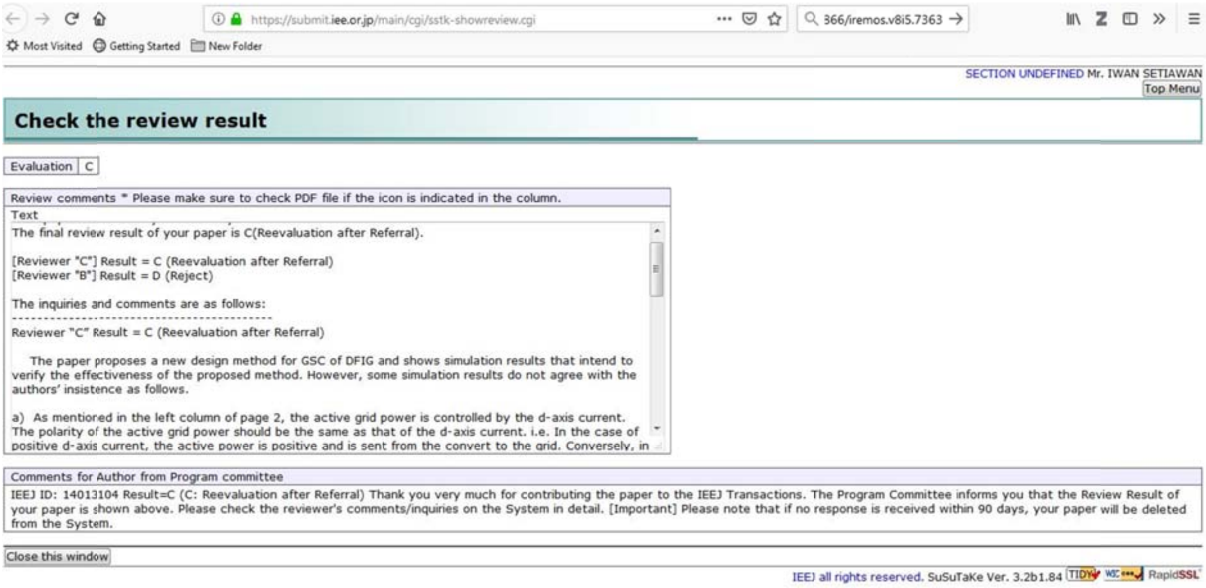
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SECTION UNDEFINED Mr. IWAN SETIAWAN

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[Reviewer "C"] Result = C (Reevaluation after Referral)
[Reviewer "B"] Result = D (Reject)

The inquiries and comments are as follows:

Reviewer "C" Result = C (Reevaluation after Referral)

The paper proposes a new design method for GSC of DFIG and shows simulation results that intend to verify the effectiveness of the proposed method. However, some simulation results do not agree with the authors' insistence as follows.

a) As mentioned in the left column of page 2, the active grid power is controlled by the d-axis current. The polarity of the active grid power should be the same as that of the d-axis current. i.e. In the case of positive d-axis current, the active power is positive and is sent from the convert to the grid. Conversely, in

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[Reviewer "C"] Result = C (Reevaluation after Referral)

[Reviewer "B"] Result = D (Reject)

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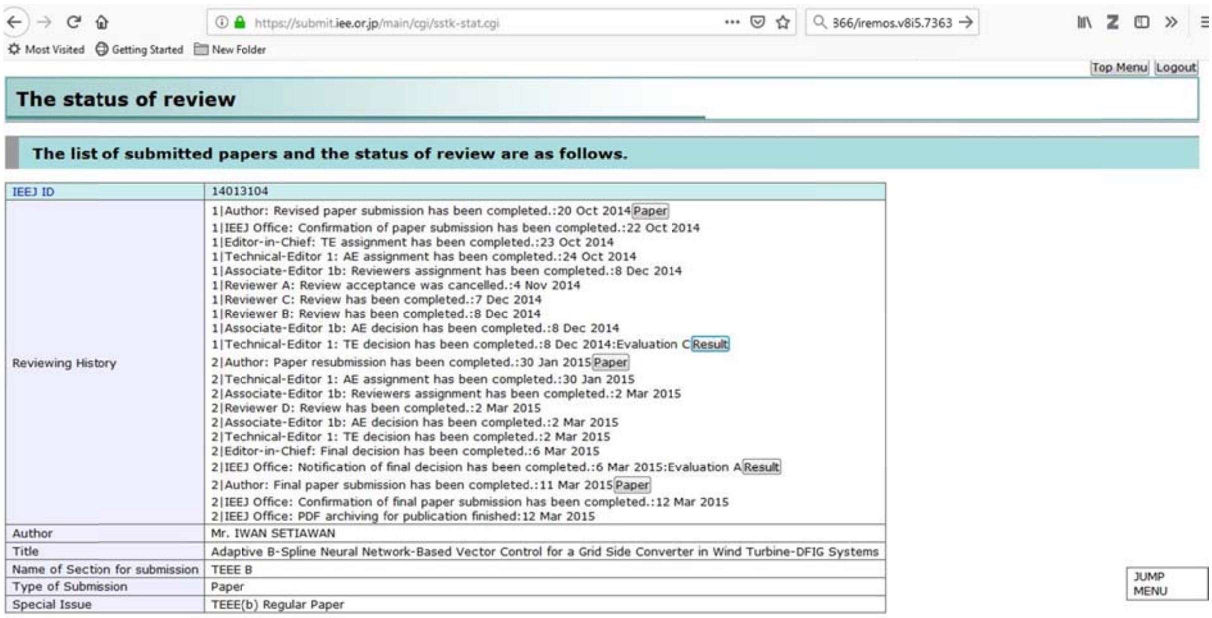
b) Give the definition of vectors W and sigma in (21).

Reviewer “B” Result = D (Reject)

This paper proposes a new control method of grid side converter for DFIG rotor excitation circuit, however, as well known, DFIG system has a loop connection through grid side converter, rotor excitation inverter and stator of the generator. The whole system characteristics are established due to interaction among electrical and control characteristic of these units. Therefore improvement of whole system won’t be lead even if a performance of single unit will become better.

The proposal of this article may effective in order to improve controlling ability but it is not acceptable as a transaction paper unless evaluation of whole DFIG system characteristic is carried out. Moreover, numerous DFIG systems have been manufactured by a major companies, and these are installed and operated at large scale wind farms in the world. Thus, this article have to explain clearly how much more improvement is possible compared to performance of present actual operating facilities.

When these issues were investigated deeply then this study can be compiled as a new article.



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Author	Mr. IWAN SETIAWAN
Title	Adaptive B-Spline Neural Network-Based Vector Control for a Grid Side Converter in Wind Turbine-DFIG Systems
Name of Section for submission	TEEE B
Type of Submission	Paper
Special Issue	TEEE(b) Regular Paper

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....Author Mr. IWAN SETIAWAN
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....Type of Submission Paper
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....Author Mr. IWAN SETIAWAN
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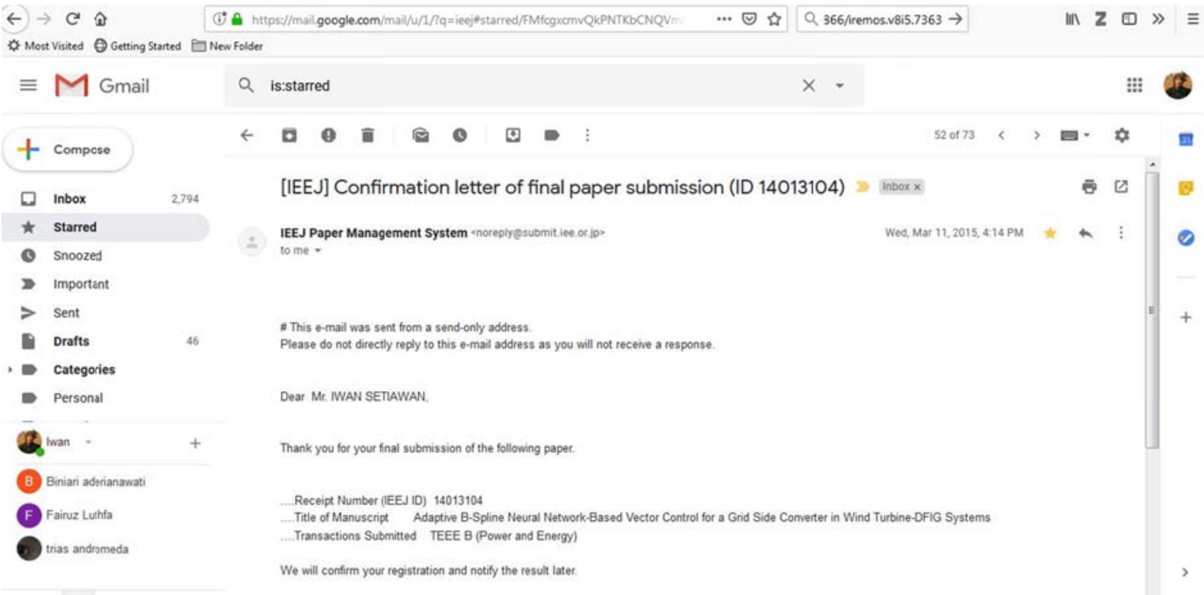

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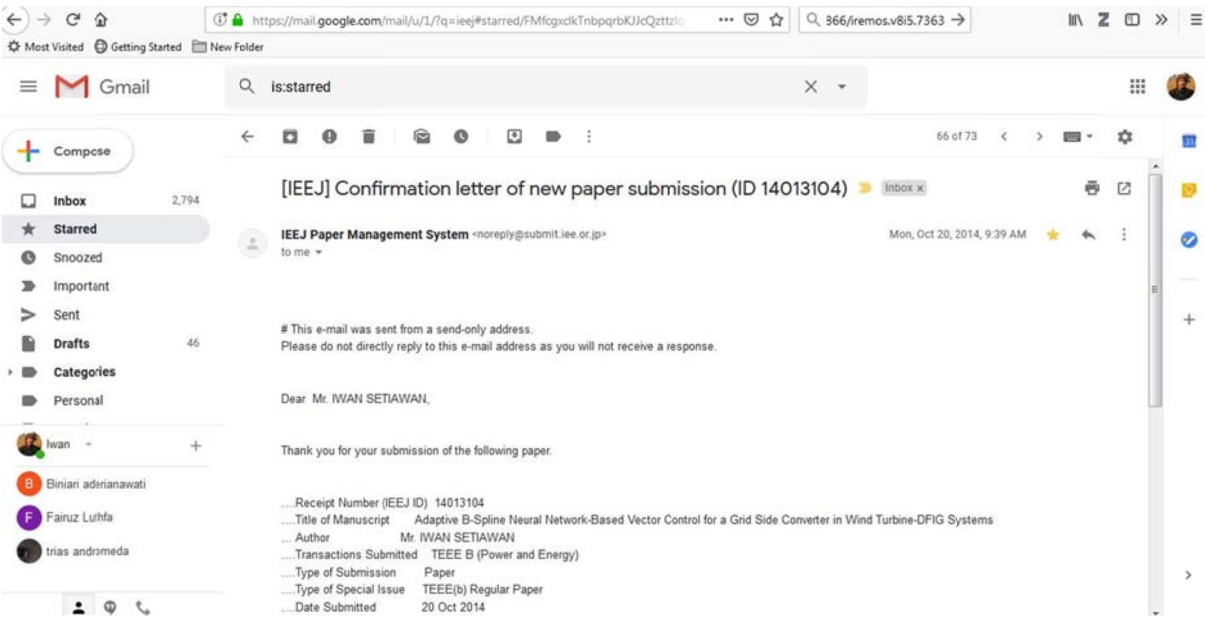

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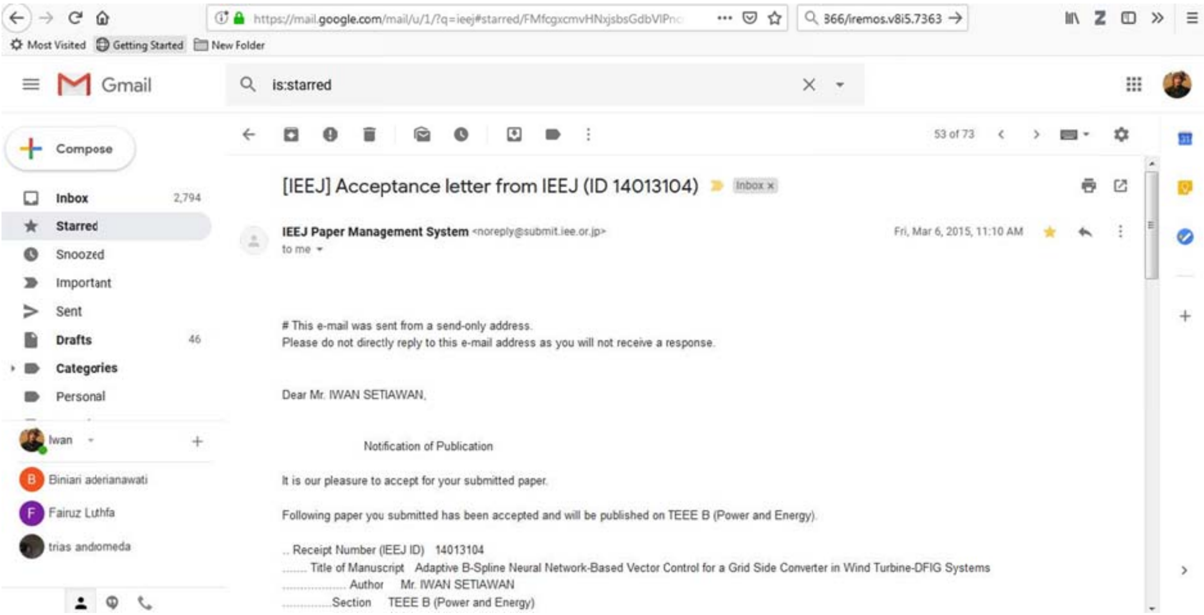
....Date Submitted 20 Oct 2014



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Dear Mr. IWAN SETIAWAN,

Notification of Publication

It is our pleasure to accept for your submitted paper.

Following paper you submitted has been accepted and will be published on TEEE B (Power and Energy).

.. Receipt Number (IEEJ ID) 14013104
.... Title of Manuscript Adaptive B-Spline Neural Network-Based Vector Control for a Grid Side Converter in Wind Turbine-DFIG Systems
.... Author Mr. IWAN SETIAWAN
..............Section TEEE B (Power and Energy)

Response to The Reviewer's Comments

First of all, the authors gratefully acknowledge to the reviewers that have gave feedback and comments for the improvement of the paper that have been submitted. The authors also would like to thanks to the chief-editor that gave opportunity to the authors to re-submit the revision of the paper for re-evaluation.

Please find our responses to the comments below:

Comment from Reviewer C:

The paper proposes a new design method for GSC of DFIG and shows simulation results that intend to verify the effectiveness of the proposed method. However, some simulation results do not agree with the authors' insistence as follows.

a) As mentioned in the left column of page 2, the active grid power is controlled by the d-axis current. The polarity of the active grid power should be the same as that of the d-axis current. i.e. In the case of positive d-axis current, the active power is positive and is sent from the convert to the grid. Conversely, in the case of negative d-axis current, the active power is negative and is sent from the grid to the convert.

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b) Give the definition of vectors W and sigma in (21).

The Autors Response for Reviewer C

a) The consistency of the three-phase grid current in Fig. 7 (b) with the polarity of the *d*-axis current (Fig. 7 (a)) and the active grid power (Fig. 7 (c)) can be proved matematically as describe below.

   - **The Proof of The consistency Fig 7(a) and 7(b)**

   By using the clark and the park invers transformation, the three-phase grid voltage could be represented by (R1) as shown below (in this case V_{qg} is zero because the rotated *dq*-axes frame reference is aligned with the rotated grid voltage vector),:

$$\begin{aligned} v_a &= V_{dg}\cos\theta \\ v_b &= V_{dg}(-\tfrac{1}{2}\cos\theta + \tfrac{\sqrt{3}}{2}\sin\theta) \\ v_c &= V_{dg}(-\frac{1}{2}\cos\theta - \frac{\sqrt{3}}{2}\sin\theta) \end{aligned} \qquad \text{(R1)}$$

   In the same way, the three-phase current controlled by the inverter in the steady state basically have the equal form with (R1) and could be represented by (R2) below (In this case,

i_{qf} is zero because the reference of the q-axis current is zero as we have done in the simulation).

$$i_a = i_{df}\cos\theta$$

$$i_b = i_{df}(-\tfrac{1}{2}\cos\theta + \tfrac{\sqrt{3}}{2}\sin\theta) \quad \text{(R2)}$$

$$i_c = i_{df}(-\frac{1}{2}\cos\theta - \frac{\sqrt{3}}{2}\sin\theta)$$

Due to the value of V_{dg} is always positive, then by refering to eq. R2 (and comparing that equation to eq. R1), we can see that if i_{df} is positive (have the same polarity with V_{dg}), then the polarity of i_a, i_b, and i_c respectively will be the same with the polarity of v_a, v_b, and v_c. Whereas if the polarity of i_{df} is negative (have different polarity with V_{dg}) then from (R1) and (R2) we can see that the three phase current i_a, i_b, and i_c respectively will have different polarity with v_a, v_b, and v_c (the current and voltage at the each phase line have different phase angle of 180^o).

So based on the analysis above the autors can prove that Fig. 7 (b) basically is consistent with Fig. 7(a): The polarity change of i_{df} which occurrs at the time of 0.12 s as shown in Fig. 7(a) practically do not change the sequence of the three-phase current. In this case, the polarity change of i_{df} just change the polarity of the three-phase current relative to the polarity of the three-phase grid voltage (However for the clarity of the current waveform, the three-phase grid voltage waveform is not plotted in that figure).

- **The Proof of The consistency Fig 7(b) and 7(c)**

In addition to equation (5) in the paper, The active grid power basically could be computed by using the teorema of the three-phase instantaneous active power as shown below:

$$P_g = v_a i_a + v_b i_b + v_c i_c \quad \text{(R3)}$$

By referring to (R3) above, it is shown that the three-phase active power will be positive as long as the current at the each of the phase line have the same polarity with the voltage at the corresponding phase line and The polarity of the active power will be negative if the current at each phase line have different polarity with the voltage at the corresponding phase line.

So based on the analysis above, the autors also can prove that Fig. 7 (b) basically is consistent with Fig. 7(c).

Below is the concise explanation for the Fig. 7 that the autors added to the paper (please see Section 4.1 in the paper)

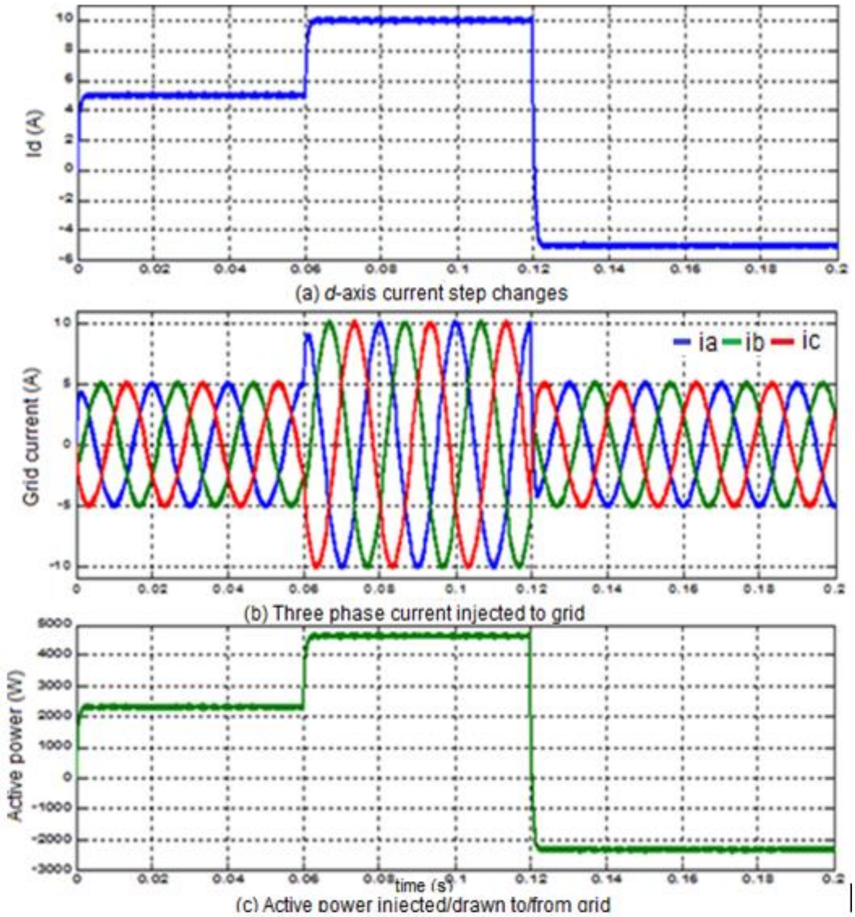

Fig.7. Response of current and active power to the reference step changes of *d*-axis current component (reference of i_{qf}=0 and α=0.1)

"From Fig. 7(a) we can see that the respon of i_{df} for the change of the reference at the time of 0s, 0.06s, and 0.12s have very fast transient time. For the i_{df} plotted in the Fig. 7(a), the corresponding three-phase current and the active power at the grid side are shown respectively in Fig. 7 (b) and Fig. 7(c). From Fig. 7(b) it is shown that the maximum value of the three-phase current is the same with the magnitude of i_{df}, whereas the polarity of those three phase current is depend on the polarity of i_{df}: For the positive polarity of i_{df} (from the time of 0s to 0.12s), then the polarity of i_a, i_b, and i_c respectively will be the same with the polarity of v_a, v_b, and v_c. If the polarity of i_{df} is negative (after the time of 0.12s), then the three phase current i_a, i_b, and i_c respectively will be reversed or have different polarity with v_a, v_b, and v_c (however for the clarity of the figure, the three-phase grid voltage waveform is not plotted in that figure). From Fig. 7(c) we can see that the polarity of the active power will be the same with the polarity of i_{df} that plotted in Fig. 7(a)."

b) The definition of vectors W and sigma in (21) have been include d to the paper(please see page 3 columb 2 at paper).

Comment from Reviewer B:

This paper proposes a new control method of grid side converter for DFIG rotor excitation circuit, however, as well known, DFIG system has a loop connection through grid side converter, rotor excitation inverter and stator of the generator. The whole system characteristics are established due to interaction among electrical and control characteristic of these units. Therefore improvement of whole system won't be lead even if a performance of single unit will become better.

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When these issues were investigated deeply then this study can be compiled as a new article.

The Autors Response for Reviewer B

The autors agree that the improvement of whole system of the DFIG is not only depend just on the performance of single unit (in this case Grid Side Converter GSC—that investigated by the autors in the paper) but also depend on the performance of other unit (in this case Rotor Side Converter RSC). However due to the utilization of the back to back AC/DC/AC converter in the DFIG control systems is to break the coupling of the RSC and the GSC, then from viewpoint of the system control design, as we know that the design (and the analysis) of the whole DFIG control system can be done independently: The design of the GSC control system and the design of the RSC control system.

The interaction of the RSC and the GSC of the DFIG control system in this case represented by current that flowing via a DC link. In the proposed paper, the influence of RSC control unit to the performance of the GSC control unit is also investigated by the autors that is by changing the DFIG rotor current arbitrarily (please see Fig. 10 in the paper).

Due to the lack of the data of the present actual operating facilities and only the GSC control unit that investigated in the paper, then the comparison of the present actual operating facilities with the whole DFIG control system could not been done in the paper. However the autors should like to investigate the problem in the future.