

CBC DECISION/CLARIFICATION SHEET

Subject: Possibility of remote restart after activation of the safety system for offshore wind turbines.		Standard and clause: IEC 61400-3:2009 IEC 61400-1:2005	Sheet No. CBC 10B
Status of document: Approved		Proposal date: 2013-09-05	Originator of proposal: Germanischer Lloyd Industrial Services GmbH Renewables Certification
Related document:			
Revision:	Approval Date:	Description:	
A	-	Original proposal	
B	2013-10-16	Adjusted proposal	

I. Motivation and introduction

Current assessments of offshore wind turbines according to IEC 61400-3 /1/, which is referring to the requirements in IEC 61400-1 /2/ for the control and protection system, brought up many discussions for practicability and several deviation requests regarding the following requirement in chapter 8.3 in /2/:

“The automatic or remote restart of a wind turbine shall not be possible where the shutdown was initiated by an internal fault or trip that is critical to the turbine safety.”

A solution shall be available for offshore wind turbines that make a remote restart after activation of the safety system possible for certain conditions.

II. Looking around

The GL Guideline for Offshore Wind Turbines /3/ already stated a possibility of remote resetting the wind turbine under certain conditions and this approach has been followed up in the GL Guideline for Wind Turbines /4/ as well as in the GL Guideline for Offshore Wind Turbines /5/.

The maintenance team MT01 ECP is currently working on a proposal for chapter 8 of the upcoming IEC 61400-1 Ed. 4. Within the latest version of the resulting working document /6/ the quote mentioned in section I of this memo has been replaced by a paragraph presenting options for automatic as well as remote reset after activation of the safety system.

More information may also be found in ISO 13849-1 clauses 5.2.2 and 5.2.3.

III. Position

Due to the fact that a respective approach is well approved by the GL standards (see section II.) since 2005 and a strong indication for the implementation of such possibilities to the future version of the IEC 61400-1 Ed. 04 (see section II.) can be found, a remote reset of the wind turbine after activation of the safety system can be considered state of the art and is accepted for current certification processes according to /1/ taking the following condition into consideration:

CBC DECISION/CLARIFICATION SHEET

- Before a remote reset after activation of the safety system is performed, a detailed root cause analysis and health check of the offshore wind turbine has to be successfully accomplished.
- The measures for evaluating the root cause of the activation of the safety system/ checking the health of the offshore wind turbine shall be capable of detecting cases such as rotor blade break-off (event parts of the rotor blade), moderately severe oil leakage, damage to main bearing, etc. with certainty.

IV. List of references

- /1/ IEC 61400-3:2009 Wind turbines – Part 3: Design requirements for offshore wind turbines
- /2/ IEC 61400-1:2005 Wind turbines – Part 1: Design requirements
- /3/ GL Rules and Guidelines - IV Industrial Services - Part 2 - Guideline for the Certification of Offshore Wind Turbines, Edition 2005
- /4/ GL Rules and Guidelines - IV Industrial Services - Part 1 - Guideline for the Certification of Wind Turbines, Edition 2010
- /5/ GL Rules and Guidelines - IV Industrial Services - Part 2 - Guideline for the Certification of Offshore Wind Turbines, Edition 2012
- /6/ Working document MT01_ECP Group “88-61400-1-MT01_Working_Doc 13June”
- /7/ ISO 13849-1:2006 Safety of machinery – Safety-related parts of control systems Part 1: General principles for design