

### Statement of Considerations

REQUEST BY ABB, INC. FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN RIGHTS  
IN SUBJECT INVENTIONS MADE IN THE COURSE OF OR UNDER UT-BATTELLE, LLC  
SOLICITATION 6400016008 UNDER PRIME CONTRACT NO. DE-AC05-00OR22725; DOE  
WAIVER DOCKET W(A)2019-004 [ORO-824]

ABB, Inc. (Petitioner) has made a timely request for an advance waiver to worldwide rights in Subject Inventions made in the course of or under UT-Battelle, LLC Solicitation No. 6400016008 entitled "Multi-port Autonomous Reconfigurable Solar Power Plant (MARS)" under UT-Battelle Prime Contract No. DE-AC05-00OR22725. The scope of work is to develop and verify the virtual synchronous generator modeling of MARS and the cyber security solutions for high level control of MARS. The work is sponsored by the Solar Energy Technologies Office in the Office of Energy Efficiency & Renewable Energy.

The dollar amount of the expected subcontract is \$665,040 with Petitioner proposing to cost share 24.97% of the estimated work (\$166,040). The period of performance is approximately 29 months from April 2019 to September 2021.

Petitioner's experience and expertise will contribute substantially to the development of the inventions made under the proposed subcontract. Petitioner is a leading company in manufacture AC and DC apparatus, including equipment and devices for stability and protection. The proposed virtual synchronous generator concept and the cyber security mitigation methods are ground-breaking technical areas and domains. Petitioner will develop control systems based on the technical results from this project and sell the systems to commercial entities involved in the operation and control of transmission and distribution circuits with solar power.

Petitioner is a technology leader in High Voltage Direct Current systems, which is a key component of MARS concept. The contract subject matter builds upon the proof-of-concept endeavors and successful execution over multi-year internal projects focusing on HVDC operations and control. Petitioner has a very favorable patent position in the aforementioned industries, as well as the specific area of AC and DC stability and protection. In ABB, technical competence exists in 1) AC and DC distribution protection; 2) AC and DC stability analysis and control. The publications listed in the response to the waiver questionnaire serve to highlight this competence.

Petitioner has made a significant investment of private funding which will directly assist and further promote development of the work to be performed under the subcontract. Bulk solar power integration is the trend of future transmission and distribution grids with the rapid development and implementation of renewable integration. The market size of the High Voltage Direct Current systems is currently in billions of US dollars, and solar integration would be a key market share. Petitioner has already developed some concepts and technologies that will be used as the basis for the project. During the course of the project, Petitioner anticipates developing new technologies that will contribute to MARS technologies, including control, protection systems with cyber security features.


Petitioner has agreed to accept the attached DOE waiver terms and conditions if the requested waiver is granted. Specifically, Petitioner agrees to abide by the conditions set forth at 35 U.S.C. §202-204 relating

to the Government license, march-in rights, preference for U.S. industry, as well as a U.S. Competitiveness provision.

Petitioner agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States, unless Petitioner can show to the satisfaction of DOE that it is not commercially feasible to do so. In the event DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's investment, etc. Petitioner further agrees to make the above condition binding on any assignee or licensee or any entity otherwise acquiring rights to any waived invention, including subsequent assignees or licensees. Should Petitioner or other such entity receiving rights in any waived invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by DOE.

Granting of the waiver should have little effect on competition since there are several technology options, this being one of many previously or yet-to-be developed in the marketplace. Currently, there are no commercial products from Petitioner and no vendor offers similar or closely competing products and systems. Different technologies can be adopted to develop commercial products for MARS. This waiver will enable Petitioner to maintain its competitive position with respect to the technologies that are also being developed and targeted for this market. The results of this project will enable Petitioner to offer differentiating product features but they will not monopolize the market as other vendors may develop their own version of these features. Thus, there should not be undue market concentration of Petitioner products.

In view of the objectives and considerations set forth in 10 CFR 784.4, all of which have been considered, it is recommended that the requested waiver for worldwide patent rights in Subject Inventions be granted.

  
Emily G. Schneider  
Assistant Chief Counsel for  
Intellectual Property

Date 5/15/2019



Based on the foregoing Statement of Considerations and the representations in the attached Waiver Petition, it is determined that the interest of the United States and the general public will best be served by a waiver of U.S. and foreign patent rights, and therefore, the waiver is granted. This waiver shall not apply to a modification or extension of the subcontract where, through such a modification or extension, the purpose, scope or cost of the subcontract has been substantially altered.

CONCURRENCE:




Charlie Gay, Ph.D.  
Director  
Solar Energy Technologies Office  
Office of Energy Efficiency  
& Renewable Energy

7/24/2019

Date

APPROVAL:



Brian Lally  
Assistant General Counsel for Technology  
Transfer and Intellectual Property

7/24/2019  
Date