## STATEMENT OF CONSIDERATIONS

REQUEST FOR ADVANCE WAIVER OF PATENT RIGHTS BY GENERAL ELECTRIC COMPANY, UNDER DOE AWARD NO. DE-OE0000858; W(A)-2017-004, CH-1784

Petitioner, General Electric Company (GE), has requested a waiver of: (a) domestic and foreign patent rights for all subject inventions conceived solely by Petitioner and (b) Petitioner's undivided interest, based on its employee's contributions, to joint domestic and foreign patent rights for all subject inventions conceived, arising under the above referenced award.

The objective of Petitioner's award is to develop, deploy, and field test next generation applications that utilize synchrophasor infrastructure to enhance grid reliability and asset utilization from two perspectives: (a) improved component and system level dynamic and steady state models for better modeling accuracy in planning and operations applications; and (b) hybrid Phasor Measurement Unit (PMU) "measurement" + system topology "model" based approach to monitor, predict and provide corrective control actions for improving grid stability.

The total anticipated cost of the award is \$4,000,000.00 including the Petitioner's contribution of \$1,440,000.00, or about thirty-six percent (36%) of the total cost of the work under the award. This waiver is contingent upon Petitioner maintaining, in aggregate, the above cost sharing percentage over the course of the award. The period of performance is from 20 March 2017 to 19 March 2019.

Referring to items 5-9 of the waiver petition, Petitioner has extensive experience in power system analysis, control and optimization technology. GE Global Research employs about 2000 scientists and engineers with nearly two thirds holding Ph.Ds. Specifically, the project team has several scientists and engineers, most with Ph.D degrees in electrical engineering and control system engineering. Members of the project team have made original contributions to advance the application of controls and systems theory to various application domains including power grids. Extensive IP has been developed before the initiation of this project. The GE Global Research Center and GE Grid Software Solutions are investing in the development of advanced synchrophasor software applications for the power grid. Furthermore, GE has a long history of investing in technology development to enable adoption of synchrophasors in power grids for improving grid reliability and asset utilization.

GE is a large manufacturer of power grid projects and is therefore positioned to potentially further develop the software applications and transition them to production grade tools to achieve improved grid reliability and asset utilization. The waiver will enable GE to ensure successful commercialization of some of the IP across its business beyond software applications for the power grid, and possibly making it commercially viable for other technologies. Accordingly, Petitioner has significant experience in developing technology within this field and will continue to further develop the contracted work.

Petitioner has agreed that this waiver will be subject to the march-in and preference for U.S. industry provisions, as well as the U.S. Government license, set out in 35 U.S.C. 202-204.

Further, Petitioner has agreed to the attached revised U.S. Competitiveness provision (paragraph (t)). The Petitioner further has agreed to the attached revised paragraph (h) to submit annual reports on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by Petitioner and any of its licensee or assignees. If sold or transferred this reporting obligation will pass on to the buyer or transferree.

Petitioner has agreed that at least 51% of the products embodying a waived invention or produced through the use of a waived invention will be manufactured substantially in the United States unless the Petitioner can show to the satisfaction of the DOE that it is not commercially feasible to do so. Petitioner has further agreed to make the above conditions binding on any assignee or licensee or any entity otherwise acquiring rights in the waived inventions, including subsequent assignees and licensees. Should Petitioner or other such entity receiving rights in a 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 inventions is suspended until approved in writing by DOE.

Referring to item 10 of the waiver petition, granting this waiver will not have an adverse impact on competition. Numerous companies are developing technologies that will directly impact the end-user's cost of energy. Additionally there are several competing approaches. Finally, as the number of Phasor Measurement Units installations increases, additional technologies may be needed to contribute to the adoption of this technology in power control grids. Thus, granting the Petition will not hinder competition in the field.

Considering the foregoing, it is believed that granting this waiver will provide Petitioner with the necessary incentive to invest its resources in the commercialization of the results of the agreement in a fashion which will make the technology available to the public in the shortest practicable time. Therefore, upon evaluation of the waiver petition and in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver be granted.

Karen L. Blouin
Patent Attorney
Intellectual Property Law Division

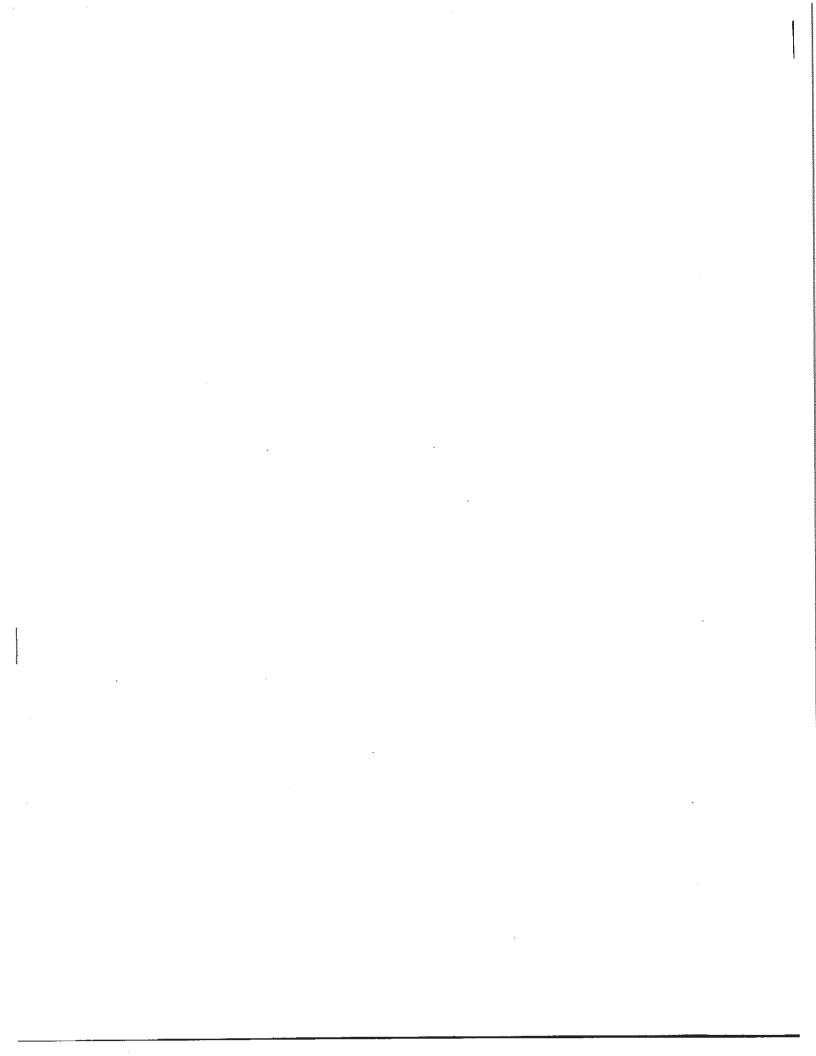
Date: 31 AW 617

Michael J. Dobbs Deputy Chief Counsel Intellectual Property Division

Date:

Based upon the foregoing Statement of Considerations and representations in the attached waiver petition, it is determined that the interests of the U.S. and the general public will best be served by a waiver of patent rights of the scope described above, and therefore the waiver is granted. This waiver will not apply to any modification of extension of the award, where through such modification or extension, the purpose, scope or cost of the award has been substantially altered.

Michael Pesin Deputy Assistant Secretary, Advanced Grid Research and Development, OE-10	Brian Lally Assistant General Counsel for Technology Transfer and Intellectual Property, GC-62



## WAIVER ACTION - ABSTRACT

W(A)- 2017-004

REQUESTOR CONTRACT SCOPE

General Operationalizing Sychrophasors for Electric Enhanced Grid Reliability and Asset

Company (GE) Utilization

RATIONALE FOR

DECISION

GE has experience in the the application of controls and systems theory to power grids including the development software applications that provide insight to grid operators and planners, and will continue to invest in research and products within the power grid field.

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## (h) Reporting on utilization of subject inventions.

The Contractor agrees to submit annual reports on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor and any of its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceedings undertaken by DOE in accordance with paragraph (j) of this clause. To the extent data or information supplied under this paragraph is considered by the Contractor, its licensee or assignee to be privileged and confidential and is so marked, DOE agrees that, to the extent permitted by law, it shall not disclose such information to persons outside the Government.

## (t) U. S. Competitiveness

The Contractor 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 the Contractor can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event the 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. The Contractor agrees that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements. Should the Contractor or other such entity receiving rights in the 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 the DOE. Contractor's agreement as set forth herein to manufacture in the U.S. will be met if the majority (i.e. at least 51%) of each product embodying any waived invention or produced through the use of any waived invention is manufactured in the U.S.

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