STATEMENT OF CONSIDERATIONS

REQUEST BY DRESSER-RAND COMPANY FOR WAIVER OF DOMESTIC AND FOREIGN PATENT RIGHTS IN ELEVEN IDENTIFIED INVENTIONS MADE DURING PERFORMANCE OF A SUBCONTRACT UNDER DOE CONTRACT NO. DE-FE0000493 BETWEEN RAMGEN POWER SYSTEMS, INC AND DOE, ENTITLED "RAMGEN SUPERSONIC SHOCK WAVE COMPRESSION AND ENGINE TECHNOLOGY"

The Petitioner, Dresser-Rand (DR), has requested a waiver of domestic and foreign patent rights in the following inventions and related patents and patent applications.

W(I)-2015-013; CH-1733; S-140,531 "ELECTRICALLY HEATED BALANCE PISTON SEAL;"

W(I)-2015-014; CH-1734; S-140,532 "MULTI-ROW OF DIFFUSER VANES WITH DIFFERENT SOLIDITY;"

W(I)-2015-015; CH-1735; S-140,533 "IMPELLER COOLING RING;"

W(I)-2015-016; CH-1736; S-140,534 "FLOWPATH FOR A SUPERSONIC COMPRESSOR;"

W(I)-2015-017; CH-1737; S-140,535 "ELECTRICALLY HEATED BALANCE PISTON SEAL;"

W(I)-2015-018; CH-1738; S-140,536 "HEAT SHIELD ON TO PRESSURE CASE;"

W(I)-2015-019; CH-1739; S-140,537 "OPEN IMPELLER WITH UNEQUAL IMPELLER BLADE SPACING;"

W(1)-2015-020; CH-1740; S-140,538 "ADJUSTABLE ABRADABLE SHROUD;"

W(I)-2015-021; CH-1741; S-140,539 "ELECTRICALLY HEATED BALANCE PISTON SEAL;"

W(I)-2015-022; CH-1742; S-140,540 "IMPELLER SHROUD LOW STIFFNESS MOUNTS;" and,

W(I)-2015-023; CH-1743; S-140,541 "MOVABLE INLET GUIDE VANES." The above-identified inventions were made by Petitioner DR while performing subcontract Q0001 to Ramgen Power Systems, Inc. under DOE Contract No. DE-FE0000493. The purpose of this waiver is to vest Petitioner with clear title to each of the inventions to enable Petitioner to continue development of the technology forming the subject matter of the inventions and to commercialize such technology.

Referring to item 3 of the Petition, the overall objective of the prime contract under which inventions arose was the execution of a successful CO_2 compressor demonstration program of an approximately 13,000 hp unit. In general, the subject inventions describe components for the respective compressor. The components are designed such that they offer improved performance, optimized efficiency, and decreased operational temperatures when incorporated into the compressor.

The period of performance of the award was from August 1, 2009, to March 31, 2015. The total amount of the ward was \$80,825,969. The prime contractor contributed \$30,825,969, or approximately thirty-eight percent (38%) of the total award as a cost share. The amount of the subcontract between Ramgen Power Systems and Petitioner was \$4,196,314.

Referring to items 5-9 of the waiver petition, DR is one of the world's largest global suppliers of rotating equipment including compressors and compressor components. DR's products are currently used in multiple industries including petrochemical production and processing, power production, and military applications. DR continues to invest in research in this field, employing greater than 1,500 employees in seven engineering and research and development centers alone. Since 2008, DR has invested \$30 million in DOE matching funds and an additional \$2 million in corporate research and development funds to develop supersonic CO₂ compression technologies. Further, DR has submitted an additional proposal for continued development of the technology. Within the proposal, DR has committed an additional \$4,000,000 as a fifty (50%) cost share under the award. Granting of these waivers will allow DR to protect their investment in the inventions and commit to further development in the field.

The granting of this waiver should effectively promote the continued development and commercial utilization of the subject inventions since Petitioner will be able to develop these technologies and incorporate them into its commercial portfolio without an adverse patent interest overshadowing its development effects. Thus, the waivers are necessary for development to proceed given the size and nature of the investment necessary to commercialize inventions of these types.

The Petitioner has informed DOE of the potential acquisition of DR by Siemens. The obligations assumed with the granting of this waiver will be passed on to any entity acquiring DR. Additionally, as in paragraph (t) of the Patent Rights – Waiver, should an entity receiving rights in the inventions 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.

The 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. 202204. Further, Petitioner has agreed to the U.S. Competitiveness provision. In brief, Petitioner has agreed that products embodying a waived invention or produced through the use of a waived invention will be manufactured substantially in the United Sates unless the Petitioner can show to the satisfaction of DOE that is not commercially feasible to do so. The 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 the 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. DR asserts there are multiple global competitors in the field. In light of the competition, granting of the waiver may have the overall effect of lowering costs across 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 Part 784, all of which have been considered, it is recommended that the requested waiver be granted.

Lacob A. Heafner Patent Attorney Intellectual Property Law Division

Brian J. Lally Deputy Chief Counsel Intellectual Property Law Division Date:

Based upon the foregoing Statement of Considerations and representations in the attached waiver petition, it is determined that the interests of the United States 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 contract, where through such modification or extension, the purpose, scope or cost of the contract has been substantially altered.

CONCURRENCE:

APPROVAL:

Dr. Darfen J. Mollot, Director Office of Advanced Fossil Technology Systems, FE-22

John T. Lucas Assistant General Counsel for Technology Transfer and Intellectual Property, GC-62

1/5/16 Date:

29/2016 Date: