STATEMENT OF CONSIDERATIONS

REQUEST BY DANISCO U.S. INC. (f/k/a GENENCOR INTERNATIONAL, INC.) FOR WAIVER OF U.S. COMPETITIVENESS PROVISION IN W(A)-00-013 FOR SUBCONTRACT ZCO-0-30017-01 UNDER THE MIDWEST RESEARCH INSTITUTE'S MANAGEMENT AND OPERATING CONTRACT DE-AC36-98GO10337

NREL and Danisco entered into subcontract ZCO-0-30017-01 to conduct research and development work relating to cellulase cost reduction for bioethanol production. In connection with the subcontract, Danisco also licensed certain NREL patents, subject to 35 USC 202-204. The goal of the research project was the development of low-cost cellulase enzymes that can be used to convert biomass into fuel ethanol. Danisco requested, and was granted waiver W(A)-00-013, which was submitted with this petition, and which includes the U.S. Competitiveness provision. Danisco developed certain technology in connection with the subcontract, and believes that only some of the technology are subject inventions. Nevertheless, due to the uncertainty of which of the technology are subject inventions, Danisco requests a waiver from the U.S. Competitiveness provision for enzyme technology it developed in connection with its subcontract, and from the U.S. manufacturing preference clause of its patent license agreement, where the enzymes will be used in ethanol plants in Brazil.

Danisco is in the process of negotiating a joint venture with Votorantim, one of Brazil's largest industrial corporations, first to develop a demonstration plant for conversion of biomass into ethanol using a system-level solution. If the demonstration plant using the system-level solution is successful, the contemplated joint venture aims to commercialize and deploy the system-level solution, both directly and perhaps indirectly through the use of one or more deployment companies, into the existing market in Brazil of more than 350 sugar mills and also into the U.S. sugar industry if commercial conditions permit. Votorantim will bring engineering know-how in material handling, process design and pretreatment technology into the joint venture. Danisco's contribution will include biotechnology, including some of the technology developed under the subcontract and the patents licensed from NREL, which it plans to license exclusively to the joint venture in the field of use of sugar cane bagasse conversion to ethanol.

Under the proposed joint venture, Danisco and Votorantim will establish a holding company in the United Kingdom that will be owned equally and will be granted licenses from each joint venture partner. Specifically, Danisco will license certain rights to use its waived inventions and sublicense the NREL patents to the holding company and any operating company established by the holding company, which will agree to honor the conditions of the patent waiver and patent license agreement. The holding company will establish a wholly-owned subsidiary in Brazil to develop a demonstration plant. A substantial amount of the work performed by the joint venture, including applications research and development, will be conducted in Danisco laboratories in Palo Alto, California.

Danisco argues that domestic manufacture of products embodying the technology in question is not commercially feasible where the enzymes will be deployed in a foreign ethanol

plant. The cost of enzymes, such as the cellulase enzymes at issue here, is a substantial factor for the production of cellulosic ethanol. To be economically viable, enzyme production should share utilities and infrastructure with the ethanol plant, wherever that plant may be located. The ethanol plant should, in turn, be located near feedstock supplies. Furthermore, the cost of transportation of bulk enzymes would be prohibitive. Therefore, the enzymes need to be produced at the site where they will be used. Indeed, it is not commercially feasible to ship enzymes for commercial cellulosic ethanol plants much further than 100-200 miles from the production site.

In addition, the United States sugar industry does not presently produce sugar cane-based ethanol products. If the development of a system-level solution for converting sugar cane bagasse into ethanol can be demonstrated successfully in Brazil, then the technology could help improve the profitability of such production and make sugar cane ethanol production in the United States economically viable. If commercial conditions permit, the joint venture plans to commercialize the system-level solution in the U.S. after it is demonstrated successfully in Brazil. If the system-level solution is commercialized in the U.S., Danisco will produce the enzymes in the U.S. Furthermore, Danisco continues to work to commercialize the technology in the U.S. on substrates other than sugar cane bagasse, such as hardwoods, paper pulp, and corn stover.

In exchange for the waiver from the U.S. Competitiveness clause of its subcontract and the U.S. manufacturing preference clause of its patent license agreement with NREL, Danisco agrees to the following legally binding commitments:

1. Danisco will continue to develop biomass cellulase enzyme technology and apply that to its ongoing efforts in the cellulosic ethanol market in the United States, at a minimum financial investment of $10 million over the next 10 years.

2. Danisco will install at least 100 cubic meters of new enzyme production capacity in the United States over the next ten years, with some of the new capacity to be dedicated to cellulase production to support the U.S. cellulosic ethanol industry. The cellulase capacity will be expanded as needed to meet market demand in the U.S.

3. Danisco will perform, at its own expense, a lifecycle assessment of cellulosic ethanol from sugar cane bagasse in Brazil, the final report for which Danisco will seek publication in a peer-reviewed technical journal.

4. Danisco will continue its long-standing collaborations with NREL and DOE to set and advance industry goals for the production of cellulosic ethanol for at least 5 years.

5. Danisco will support publicizing the U.S.-Brazilian MOU describing ethanol production in the Western Hemisphere by issuing a press release, conducting media outreach, posting relevant information on its website, and will use, at its own expense, a global public relations firm to support this activity.

Considering the foregoing, I believe that granting this waiver will provide Danisco with the necessary incentive to invest its resources in commercializing the results of the grant in a manner that will make the above technology available to the public in the shortest 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, I recommend that the requested waiver be granted.

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Julia Cook Moody
Patent Attorney
Golden Field Office

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 determined above, and therefore the waiver is granted.

CONCURRENCE:

[redacted]

Jacques Beaudry-Losique
Program Manager
EE-2E

Date: May 28th 2008

APPROVAL:

[redacted]

Paul A. Gottlieb
Assistant General Counsel for Technology
Transfer and Intellectual Property

Date: 1-29-08