

Entity Name: South Dakota State Government
Event Number: 8658
Event ID: 23RFP8658
Event Name: Disc Stack Centrifuge
Requested By: Missy Schuetzle
Created By: Missy Schuetzle
Due By Date: 04/25/2023 05:00 PM Central Time
Q&A Cutoff Date: 04/11/2023 3:35 PM Central Time
Invitation Type: Invitation Only
Assigned Commodities: 490-43 Laboratory and Scientific Equipment and Supplies (Not Otherwise Classified)
Allow Supplier Terms and Conditions: No
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Event Status: Event Under Review

Section #: Name:

1 Section 1 - 23RFP8658

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1 SCOPE

The project will include a new Disc Stack Centrifuge. This document defines the requirements and deliverables for this system. It describes overall requirements that must be met to produce the specific equipment requested. This document covers the procurement and delivery of the systems, with no required installation.

This URS is the input document for the:

- Equipment procurement purposes
- Equipment sizing
- Functional and technical specifications

2 BACKGROUND

The Dakota Bioproducts Innovation Institute is a research facility for the development of high-quality bioproducts. A Disc Stack Centrifuge skid has been identified as one of the separation technologies that will be available for customer use.

3 PROCESS DESCRIPTION

The Disc Stack Centrifuge skid will be used to separate a variety of streams. Several easily interchanged bowl types will be required, including clarifier, separator, and nozzle bowls. Bowl speed will be variable and easily adjusted for different process requirements via a frequency converter. A centripetal pump will be used for foam-free removal of clarified liquid under pressure. A hydraulically operated self-ejecting bowl will be supplied for solids discharge. The unit will be CIP cleanable without dismantling.

4 Basis of Design

4.1 Capacities

Based on typical fermentation broth, the expected feed flow rate is four to ten GPM at a solids concentration between 0.1 and 30% solids w/w.

4.2 Skidded Construction

The disc stack centrifuge and accessories shall be mounted on a skid, work as a stand-alone unit, and be supported by plant utilities. Requirements for the centrifuge skid and its component parts will be defined by the skid supplier, in a pre-purchase detailed proposal and drawings.

4.3 Health, Safety and Environment (HSE)

The centrifuge skid will satisfy appropriate conformity assessment procedures and the controls shall carry the UL marking. Selected unit shall be constructed per the current ASME BPE standard. The unit will be designed to protect users from hot surfaces. Pressure relief safety valves or rupture disks shall be vented to a safe location.

4.4 Operation, personnel and automation

The disc stack centrifuge skid will be fully automated as a standalone unit such that operations personnel will not need to attend to the skid once the unit is started and operating. An Ethernet connection for SCADA interface for batch reporting shall be provided.

4.5 Materials of Construction

All materials of construction must be compatible with ambient and hot water for injection (WFI), and typical chemical cleanings agents such as phosphoric acid, potassium hydroxide, and sodium hydroxide up to 3%. Piping specifications, including all gasket and valve seat material must align with current ASME BPE standards, where applicable.

4.6 Reliability & maintenance

The skid will be designed to operate routinely during 24 / 7 / 365 operations. All wear parts shall be easily accessible and replaced on a regular maintenance schedule. Wear parts like gaskets shall be stock items that can be ordered and delivered in a timely manner.

Terms and Conditions

ESM Sourcing Terms

None

General Terms and Conditions

None

Event Specific Terms and Conditions

Refer to attached RFP Document.