

- 80 Freezer

USER REQUIREMENT SPECIFICATIONS

Dakota Bioproducts Innovation Institute

1414 Research Park Way

Brookings, SD, 57006

South Dakota State University

Box 2201, SAD 200

1015 Campanile Ave

Brookings, SD 57007

U.S. DEPARTMENT OF COMMERCE

Economic Development Administration (EDA)

Award Number: 05-79-06192

Revision No.: 0

APPROVED

1 TABLE OF CONTENTS

1	TABLE OF CONTENTS.....	2
2	SCOPE.....	3
3	BACKGROUND.....	3
4	PROCESS DESCRIPTION.....	3
5	BASIS OF DESIGN	4
5.1	CAPACITIES.....	4
5.2	SKIDDED CONSTRUCTION.....	4
5.3	HEALTH, SAFETY AND ENVIRONMENT	4
5.4	OPERATION, PERSONNEL AND AUTOMATION	4
5.5	MATERIALS OF CONSTRUCTION.....	4
5.6	RELIABILITY & MAINTENANCE	4
6	ABBREVIATIONS, ACRONYMS & DEFINITIONS.....	5
7	USER REQUIREMENT SPECIFICATIONS.....	6
8	SELECTION CRITERIA.....	8
9	RETURN BIDS TO	9
10	OTHER PROVISIONS.....	9

2 SCOPE

The project will include a new -80 Freezer. This document defines the requirements for this system. It describes overall requirements that must be met to produce the specific equipment requested. This scope covers procurement, delivery, and start-up support of the specified equipment; no installation is required.

This URS is the input document for:

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

Bids will be evaluated based on compliance with the URS, pricing, lead time, and the company's experience and track record as they pertain to the relevant equipment. See Evaluation Criteria below.

3 BACKGROUND

The Dakota Bioproducts Innovation Institute is a research facility for the development of high-quality bioproducts. A -80 Freezer has been identified as needed for storage of customer samples and strains for fermentation-based technologies. This will need to securely store customer samples taken during the process, as well as freezer stocks of microbial cultures for use in the production facility. As some of these can be restricted and highly sensitive for commercial value, there is a stringent requirement for security in accessing the freezer.

4 PROCESS DESCRIPTION

The -80 freezer will be large enough to store multiple days to weeks-worth of samples as well as freezer stocks. The freezer must have a secure mechanism to prevent general access to the freezer.

5 BASIS OF DESIGN

5.1 Capacities

The -80 Freezer must maintain -80C, have an alarm system to alert if the temperature is not cold enough—both at the moment in the lab, as well as a remote alarm system to alert someone for off hour freezer failure, and a security mechanism to block general access to the freezer.

5.2 Skidded Construction

N/A

5.3 Health, Safety and Environment

N/A

5.4 Operation, personnel and automation

Access to the freezer will be authorized individuals only, with logged entry and retrievable history. Unit will have a mechanism to connect to internet and be able to remotely allow authorized individuals to know when alerts for deviation and access are ongoing.

5.5 Materials of Construction

N/A

5.6 Reliability & maintenance

Freezer must be reliable for 24/7/365 operation, with mechanisms in place to ensure that the user is aware if something is malfunctioning (temperature) via alarm and remote alert capabilities.

6 ABBREVIATIONS, ACRONYMS & DEFINITIONS

Acronyms	Description
ASME-BPE	American Society of Mechanical Engineers Bio-Processing Equipment
CIP	Clean In Place
GPM	Gallons per Minute
HMI	Human Machine Interface
REQ	Required Attribute
OPT	Optional Attribute
P&ID	Piping & Instrumentation Diagram
PLC	Programable Logic Controller
RPM	Revolutions per Minute
SCADA	Supervisory Control and Data Acquisition
UL	Underwriters Laboratories
URS	User Requirements Specification
WFI	Water for Injection

7 USER REQUIREMENT SPECIFICATIONS

URS TABLE – -80 Freezer		
Designation	Description	Type
URS-F1	Freezer must be constructed using 1” think vacuum panel insulation in conjunction with environmentally friendly water blown foam	REQ
URS-F2	Door gasket must provide 7 independent insulation zones along with 4 points of contact to ensure sample security	REQ
URS-F3	Freezer shall be painted with high impact, scratch resistant powder coat finished interior and exterior to ensure long term viability and premium temperature uniformity	REQ
URS-F4	To reduce condensation, the perimeter heater shall be on the door side not on the cabinet side to limit hear introduction into the sample storage area	REQ
URS-F5	The thermal breaker shall be made of plastic to limit hear leakage into the cabinet	REQ
URS-F6	Door latch allows one-handed opening and closing, handle must include door key lock as well as padlock provision for added security	REQ
URS-F7	Freezer shall have 4 or 5 internal storage compartments with a minimum of 2 polystyrene insulated inner doors to ensure sample security. Inner doors should have no latches or external magnets and must be removable for easy cleaning without the use of tools	REQ
URS-F8	Freezer shall have an automatic heated pressure equalization port with allows for rapid re-entry to the cabinet	REQ
URS-F9	Freezer shall have two 1-insch access ports as standard	REQ
URS-F10	Freezer door must open at least 180 degrees for easy sample access	REQ
URS-F11	Freezer shall have an RS485 output, dry contacts and 4-20mA output for remote monitoring purposes	REQ
URS-F12	Freezer shall have built in WiFi based connectivity that can be turned on and off based on user input	REQ
URS-F13	WiFi based connectivity must transmit freezer temperature and alarms for remote monitoring	REQ
URS-F14	WiFi based connectivity must be supported by a user accessible cloud-based application from which data monitoring is capable	REQ
URS-F15	Wi-Fi based connections must support both open and Enterprise based networks	REQ
URS-F16	Wi-Fi based connections must support WPA2-PSK, WPA-PSK, WEP, WPA2-EAP-PEAP, WPA-EAP-PEAP networks	REQ
URS-F17	Control settings, operational settings, and internal programming of the freezer shall not be capable of modification or alteration via Wi-Fi based connectivity	REQ
URS-F18	<i>Freezer shall hold 700 2” boxes or 70000 2ml Vials with a vial to footprint ratio of 7090 2m vials per 66864 of floor space</i>	REQ

URS TABLE – -80 Freezer		
Designation	Description	Type
URS-F19	Freezer shall allow for set-point security control that blocks specific users from changing freezer set point or alarms through the use of a username and password control. Unit shall allow for up to 150 users	REQ
URS-F20	Freezer shall have a high performance operating mode that can be activated by the user without loss of power to the freezer	REQ
URS-F21	Freezer shall have an on-board data logger that allows for a minimum of 6 GB of data storage	REQ
URS-F22	Data must be available from the display for a minimum of 7 days. Data must also be downloadable via a USB port	REQ
URS-F23	Power management system shall show incoming line voltage, indicate low or high line voltage, and provide voltage correction of up to +/- 10% of rating. Line voltage should be logged for a period of up to 15 years and be downloadable via a USB port	REQ
URS-F24	Freezer shall log all power interruptions and provide audio and visual notifications	REQ
URS-F25	Freezer shall have adjustable power recovery time delay that allows user to set a time delay between 1 second and 20 minutes after power failure	REQ
URS-F26	Freezer shall have an adjustable extreme ambient alarm to protect against unsafe ambient operating conditions. Ambient alarm shall have a visual and audible notification when active	REQ
URS-F27	Freezer shall display temperature in Celsius or Fahrenheit	REQ
URS-F28	Freezer shall have a graphical display of temperature in the form of a graph that is adjustable for a period of 2, 4 or 6 hours	REQ
URS-F29	Freezer shall have a screen auto-off selection that allows the screen to darken between the hours of 9pm and 6am.	REQ
URS-F30	Freezer shall record number of door openings and date/time of last opening. This counter shall be resettable by the user	REQ
URS-F31	Freezer shall record temperature excursions including actual temperature, warmest temperature and coldest temperature. This indicator shall be resettable by the user	REQ
URS-F32	Freezer shall record events in an event log viewable on the freezer display. This log shall include the event type, date and time. Event log data shall be downloadable via a USB port and viewable in standard programs such as MS Excel	REQ
URS-F33	Freezer shall support temperature profile and event log on-demand pdf reporting downloadable via a USB port	REQ
URS-F34	Freezer shall notify customer to perform preventative maintenance tasks including filter change and backup battery test	REQ
URS-F35	Freezer shall use only natural, commercially available refrigerants (Hydrocarbon) with no special blends required	REQ
URS-F36	Freezer shall utilize variable speed controls to optimize temperature performance and energy	REQ

URS TABLE – -80 Freezer		
Designation	Description	Type
URS-F37	Freezer must be built to and contain the registration mark for UL, cUL, and CE standards for safety and performance	REQ
URS-F38	Freezer must be certified by the U.S. Environmental Protection Agency's ENERGY STAR® program	REQ
URS-F39	Freezer must come with a 5-year standard warranty	REQ
URS-F40	Freezer must come with a 12-year total compressor parts warranty	REQ

END OF SPECIFICATION

8 SELECTION CRITERIA

Vendors will be evaluated based on the following criteria:

Evaluation Criteria		
Description	Ranking	Weight
Mandatory Technical Requirements A review of your proposal to determine adherence with the REQ specifications and technical requirements.	1-10	30%
Proposal Pricing Review of your proposal in relation to the services offered in the proposal. Proposals will be evaluated against competing proposals for cost effectiveness. Proposals will be evaluated to be reasonable and appropriate.	1-10	20%
Technical Response The technical response in your proposal portrays knowledge, experience, and professionalism. Relevant product features and/or specifications are available with your equipment other than those mandatory specifications allotted above.	1-10	10%
Lead Time A review of your product's lead time to meet business objectives.	1-10	15%
Product Warranty The available warranty, in scope, duration, and value, proposed with your product.	1-10	5%
Experience and Demonstrated Results Our evaluation will include a review of your history, your experience as it relates to the requirements within this RFP, evidence of past performance, quality and relevance of past work, references, and related items.	1-10	20%

9 RETURN BIDS TO

Craig Arnold craig@dbii.org

Bobby Markham Bobby.Markham@sdstate.edu

10 OTHER PROVISIONS

Must meet 200 CFR buy America Provision• Title 49 Subtitle B Chapter VI [Part 661](#)

Federal Participation Disclosure – “This project will be partially funded with Federal funds from the United States Department of Commerce, Economic Development Administration and therefore is subject to the Federal laws and regulations associated with that program.”

Must meet Federal Contract provision 200 CFR Title 2 subtitle A Chapter II [Part 200](#)

1.1 CERTIFICATION RELATING TO PROHIBITED ENTITY

For contractors, vendors, suppliers, or subcontractors who enter into a contract with the State of South Dakota by submitting a response to this solicitation or agreeing to contract with the State, the bidder or offeror certifies and agrees that the following information is correct:

The bidder or offeror, in preparing its response or offer or in considering proposals submitted from qualified, potential vendors, suppliers, and subcontractors, or in the solicitation, selection, or commercial treatment of any vendor, supplier, or subcontractor, is not an entity, regardless of its principal place of business, that is ultimately owned or controlled, directly or indirectly, by a foreign national, a foreign parent entity, or foreign government from China, Iran, North Korea, Russia, Cuba, or Venezuela, as defined by SDCL 5-18A. It is understood and agreed that, if this certification is false, such false certification will constitute grounds for the State to reject the bid or response submitted by the bidder or offeror on this project and terminate any contract awarded based on the bid or response. The successful bidder or offeror further agrees to provide immediate written notice to the contracting executive branch agency if during the term of the contract it no longer complies with this certification and agrees such noncompliance may be grounds for contract termination.

1.2 RESTRICTION OF BOYCOTT OF ISRAEL

For contractors, vendors, suppliers, or subcontractors with five (5) or more employees who enter into a contract with the State of South Dakota that involves the expenditure of one hundred thousand dollars (\$100,000) or more, by submitting a response to this solicitation or agreeing to contract with the State, the bidder or offeror certifies and agrees that the following information is correct:

The bidder or offeror, in preparing its response or offer or in considering proposals submitted from qualified, potential vendors, suppliers, and subcontractors, or in the solicitation, selection, or commercial treatment of any vendor, supplier, or subcontractor, has not refused to transact business activities, has not terminated business activities, and has not taken other similar actions intended to limit its commercial relations, related to the subject matter of the bid or offer, with a person or entity on the basis of Israeli national origin, or residence or incorporation in Israel or its territories, with the specific intent to accomplish a boycott or divestment of Israel in a discriminatory manner. It is understood and agreed that, if this certification is false, such false certification will constitute grounds for the State to reject the bid or response submitted by the bidder or offeror on this project and terminate any contract awarded based on the bid or response. The successful bidder or offeror further agrees to provide immediate written notice to the contracting executive branch agency if during the term of the contract it no longer complies with this certification and agrees such noncompliance may be grounds for contract termination.

1.3 CERTIFICATION OF NO STATE LEGISLATOR INTEREST

Offeror (i) understands neither a state legislator nor a business in which a state legislator has an ownership interest may be directly or indirectly interested in any contract with the State that was authorized by any law passed during the term for which that legislator was elected, or within one year thereafter, and (ii) has read South Dakota Constitution Article 3, Section 12 and has had the opportunity to seek independent legal advice on the applicability of that provision to any Agreement entered into as a result of this RFP. By signing an Agreement pursuant to this RFP, Offeror hereby certifies that the Agreement is not made in violation of the South Dakota Constitution Article 3, Section 12.
