

<p style="text-align: center;">EXHIBIT A</p> <p style="text-align: center;">BASIC ORDERING AGREEMENT NO.</p> <p style="text-align: center;">6XXXXX</p> <p style="text-align: center;">SURF RELIABILITY PROJECTS</p>	<p>Fermi Research Alliance LLC Kirk Road & Wilson Street P.O. Box 500 – Mail Station 210 Batavia, IL 60510-0500 Procurement Department</p>
<p>Subcontractor:</p> <p>South Dakota Science and Technology Authority / Sanford Underground Research Facility Attention: Sharon Hemmingson 630 E Summit Street Lead, SD 57754 Phone: 605.722.4044 Fax: E-Mail: shemmingson@sanfordlab.org</p>	<p>FRA Procurement Representative:</p> <p>Name: James Hohbein Title: LBNF Senior Project Procurement Administrator Phone: (630) 840-6782 E-Mail: hohbein@fnal.gov</p>

Introduction

This Basic Ordering Agreement (hereinafter "BOA") is for services and construction at the Sanford Underground Research Facility (SURF) located in Lead, South Dakota. Specific reliability/refurbishment and CD-3a tasks associated with the LBNF Project will be completed under task orders under this BOA on a cost reimbursable no fee basis.

This BOA is between Fermi Research Alliance, LLC and the party identified above as the "Subcontractor".

This BOA is issued under Prime Contract No. DE-AC02-07CH11359 between the United States Government (hereinafter "Government"), represented by the Department of Energy (hereinafter called "DOE") and Fermi Research Alliance, LLC (hereinafter "FRA") for the management and operation of the Fermi National Accelerator Laboratory and the performance of certain research and development work.

Agreement

The parties agree to perform their respective obligations in accordance with the terms, conditions, and provisions of the attached SCHEDULE OF ARTICLES and the documents referenced or incorporated therein, which together with this Signature Page shall collectively constitute the entire Agreement and shall supersede all prior negotiations, representations, or agreements, whether verbal or written.

**SOUTH DAKOTA SCIENCE AND
TECHNOLOGY AUTHORITY**

FERMI RESEARCH ALLIANCE, LLC.

By: _____

By: _____

Name: _____

Name: Jeffrey W. Irvin

Title: _____

Title: Finance Section Deputy Head

Date: _____

Date: _____

SCHEDULE OF ARTICLES

ARTICLE 1 – SCOPE OF WORK

- A. Description. The Subcontractor shall provide and perform the following work, in accordance with this Subcontract:

Provide services and/or construction in support of Sanford Underground Research Facility (SURF) Reliability Projects at the SURF site in Lead, SD for Fermi Research Alliance LLC (FRA). The Scope of Work (SOW) is described in further detail in Exhibit B.

The Subcontractor will be required to provide any necessary services or construction under this agreement in compliance with the applicable portions of the of the U.S. Department of Energy and the State of South Dakota codes, orders and regulations as incorporated into contract No. DE-AC02-07CH11359 between the U.S. Department of Energy and FRA.

The materials, supplies, equipment, tools, and other incidental items furnished or used by the Subcontractor shall meet nationally recognized safety standards or have been tested and found safe for use.

- B. Location. The principal location for the work to be performed by the Subcontractor shall be the SURF at the former Homestake Mine, located in Lead, South Dakota.

- C. Task Orders/Releases.

FRA will issue separate purchase orders for each Task Order/Release referencing the Basic Ordering Agreement (BOA). Tasks may include, but are not necessarily limited to, the effort as delineated in Exhibit B (Scope of Work).

Services and/or construction tasks will normally be negotiated as cost reimbursable task orders with a total estimated cost. FRA may choose to negotiate a firm-fixed-price task order for specific tasks based on the complexity and features of the work.

The number of tasks to be negotiated will depend upon the availability of funding and the guidelines as established by Exhibit B - Scope of Work. This BOA does not provide for a minimum or maximum number of task orders or dollar amounts.

The Subcontractor will submit a proposal for each task that includes a detailed schedule of deliverables, dates of review submittals, and the completion date for the task. The proposal will be in response to the request for proposal (RFP) provided by FRA. The proposal will be detailed enough to form the basis for a total estimated cost under a cost reimbursable task order.

The Subcontractor submitted task order proposals must include a list of proposed Sub-tier subcontractors and associated costs and milestones. Any known Sub-tier subcontractors and outside associates or consultants required by the Subcontractor in connection with the construction or services covered by the BOA will be limited to individuals or firms that were specifically identified and agreed to with FRA during task order negotiations. The

Subcontractor must obtain FRA Procurement Administrator's written consent before making any substitution for these sub-tier subcontractors, associates, or consultants.

The Subcontractor will submit a Project Quality Control (PQC) Plan no later than ten (10) calendar days after receipt of the award of each task under this BOA.

FRA may elect to establish Design Support and/or Construction Support tasks to provide miscellaneous support from local subject matter experts and/or local contractors. These tasks will consist of scope and deliverables in support of ongoing design or construction. This is done to quickly respond to critical support of ongoing programs and projects. For sub-tasks under a general support task, the Subcontractor will provide a detailed scope, schedule and estimated cost in response to direction by FRA for the subtasking under the Design Support or Construction Support Tasks.

- D. Acceptance. Acceptance to be completed by FRA upon completion of each Task Order issued pursuant to this BOA. Acceptance of the work under this BOA shall be based on the Subcontractor's performance and completion of the work in consonance with high professional standards and compliance with the delivery and reporting requirements specified herein.

ARTICLE 2 – PERIOD OF PERFORMANCE

This BOA shall take effect May 1, 2017 and remain in effect through September 30, 2021.

ARTICLE 3 – ESTIMATED COST AND LIMITATIONS

A. Estimated Cost.

The aggregate value of all Task Orders/Releases with separate cost ceilings, which may be issued hereunder, is expected to total Nineteen Million Seventy Thousand Dollars and No cents (\$19,070,000.00). Payment shall be made as provided in the Exhibits attached hereto. The Subcontractor shall endeavor to perform this BOA within the stated estimated cost amount. The estimated cost amount specified above shall be the limit of FRA's liability for all costs under this BOA, any other provision of this BOA notwithstanding, and shall not be exceeded by the Subcontractor.

- B. Allocated Funding. Task Orders/Releases issued against this BOA may be incrementally funded. Any such incrementally funded orders are subject to the *Limitation of Funds* clause (Federal Acquisition Regulation (FAR) 52.232-22) included in FRA Terms and Conditions for Cost Reimbursable Subcontracts (FL-202).

It is contemplated that further allocations of funds, up to the total of the estimated cost amount identified above, will be made by FRA, by written unilateral modifications to these Task Orders/Releases specifically increasing the allocated funding amount.

- C. Allowability. FRA shall reimburse the Subcontractor for its direct costs and a portion of its indirect costs as determined allowable and allocable in accordance with FAR 52.216-7 *Allowable Cost and Payment*, which is made a part of the BOA through incorporation of the attached FL-202; FAR Subpart 31.6; and 2 CFR 200, Subpart E - *Cost Principles*, except as otherwise limited or excluded by other provisions of this Subcontract.

Any travel costs shall be reimbursable in accordance with Title 2 Code of Federal Regulations, Grants and Agreements Part 200 Uniform Administrative Requirements, Cost Principles, And Audit Requirements for Federal Awards, Subpart E Cost Principles, and Section 474 Travel Cost (2 CFR 200.474) and the Subcontractor's institutional travel policy. All travel not specifically included in the Subcontractor's Task Order/Release cost proposal must be approved in advance by FRA Procurement Representative.

In determining the allowable indirect costs under this BOA, FRA agrees to use the federal government-approved pre-determined or final indirect expense rates. If the Subcontractor does not negotiate pre-determined or annual final indirect expense rates with a federal government agency, then the Subcontractor must submit a final indirect expense rate proposal to FRA Procurement Representative within six months after the end of each Subcontractor fiscal year during performance of this BOA to establish approved final indirect expense rates. The Subcontractor's federal government-approved or FRA-approved pre-determined or provisional indirect rates shall be used for interim billing purposes, pending finalization.

- D. Sales Taxes. FRA shall not be charged for, and the payments made under this BOA shall not include State sales or use tax for any items purchased by the Subcontractor for performance of this BOA for which the Government takes title in accordance with the Property Clause (Clause 15 of FRA Terms and Conditions for Cost Reimbursable Subcontracts (FL-202)). Any excise tax issues are yet to be determined and will be addressed on an individual Task Order basis.
- E. Audits. Task Orders/Releases issued under this BOA involve the expenditure of Federal funds, and the Subcontractor shall ensure these Task Orders/Releases are included in its scheduled annual Single Audit Act audits (see 2 CFR 200, Subpart F - *Audit Requirements*), and make the results of the audits available to FRA. Otherwise, FRA or the U.S. Government may audit the Subcontractor's costs hereunder and, in such event, FRA may endeavor to arrange for the audit to be performed by the cognizant government audit agency. The Subcontractor shall include expenditures from this subcontract in their annual Schedule of Expenditures of Federal Awards. The federal program name should include "FNAL" as the pass-through entity and this BOA number, as required by 2 CFR 200.510.

ARTICLE 4 – INVOICES AND PAYMENT

A. Invoices

1. All invoices shall be emailed directly to the Fermi National Accelerator Laboratory (FNAL) Accounts Payable Office at apinvoices@fnal.gov. The "subject" line of the email shall state the Subcontractor's name and the Task Order/Release number.

If the Subcontractor is unable to submit an invoice by email, it may submit the invoice to the following address:

Fermi National Accelerator Laboratory
Accounts Payable
P.O. Box 500
Batavia, IL 60510

2. Interim invoices for labor may be submitted biweekly and other interim invoices shall be submitted on a monthly basis. A "Final Invoice" shall be submitted within 60 days of completion of the work or expiration or termination of the Task Order/Release.
3. All invoices shall state the Task Order/Release number; clearly identify the Subcontractor (including business heading or logo); include an invoice date, unique invoice number, and remittance address; sufficiently identify the incurred costs being invoiced, delineated by cost element and lowest-level WBS level, including the cumulative amounts incurred; and identify any separately payable freight charges (with receipts if available) and taxes. Travel costs will be submitted as a separate invoice. Invoice(s) in a spreadsheet format are not acceptable, but a spreadsheet can be used to support an invoice. The Subcontractor shall maintain records which support all invoiced amounts and provide them to FRA Procurement Representative upon request.
4. Invoices including costs for property acquired by the Subcontractor at a cost of \$5,000 or more shall include or be supplemented with a description of the property and shall identify the assigned property number; the manufacturer; the serial number and model number; the acquisition date; the unit price, quantity, and total cost of the property; and the location of the property.

B. Payment

All invoices except the final invoice shall be payable within 20 days of receipt, or 10 days if the Subcontractor is a small business; provided, however, that payments made thereafter shall not be subject to any penalty, interest, or late charges. Only those items/services identified in these Task Orders/Releases or Modification will be considered for payment. Payment amounts may be adjusted for any applicable credits, offsets, or withholds. The final invoice shall be payable upon determination of the final allowable costs and the Subcontractor's compliance with all of the requirements of this BOA. Questions regarding invoices should be directed to the FRA Procurement Representative. Payment shall be made electronically.

ARTICLE 5 – FOREIGN TRAVEL

- A. All foreign travel is subject to the requirements of DOE Order 551.1D, *Official Foreign Travel*, and must be approved in advance, even if the travel is included in the Subcontractor's cost proposal or indirectly charged. The Subcontractor shall submit the following information to the FRA Procurement Representative or other designated FRA Technical Representative at least 45 days prior to the departure date.
1. Destination (country, business location, and lodging location)
 2. Trip departure and return dates for each business location (city and country).
Subcontractors are required to disclose any planned vacation to be done in conjunction with official business.
 3. Business purpose(s). Describe the activities that will be conducted for each business location (response limited to between 230 and 1500 characters).
 4. Trip description and benefit. Describe how the trip will benefit FRA/DOE and what the Subcontractor expects to accomplish (response limited to between 230 and 2000 characters)

5. Host and accommodation information. Provide the in-country host name, telephone number, and institution for each business location (country). Also provide the hotel name and local telephone number (i.e., no 800-numbers) for each business location.
 6. Conference information. If applicable, provide the conference name and acronym along with conference's URL and conference role (participant, presenter, chair, etc.).
 7. Flight information. Provide a copy of airline travel itinerary or proposed flight itinerary.
- B. Foreign travel is travel (whether wholly or partly on official business) from the United States (including Alaska, Hawaii, the Commonwealths of Puerto Rico and the Northern Mariana Islands, and the territories and possessions of the United States) to a foreign country (including Canada and Mexico) and return; and travel between foreign countries by persons, including foreign nationals.

ARTICLE 6 – BOA ADMINISTRATION

- A. Notices, Requests, and Modifications. The Subcontractor shall submit all notices and requests for approval by email to FRA Procurement Representative indicated at the following mail address:
- James Hohbein
Fermi Research Alliance LLC
Kirk Road & Wilson Street
P.O. Box 500 – Mail Station 210
Batavia, IL 60510-0500

Only the FRA Procurement Representative is authorized to modify the terms, conditions, and requirements of this BOA, including any changes to the description of the work, and to issue any notices and approvals required by this BOA.

- B. FRA's Josh Willhite is the FRA Technical Representative for this BOA. This individual is designated to monitor performance of the work and to interpret and clarify the technical requirements, but is not authorized to make changes to the work or to modify any of the terms and conditions of this BOA, including those related to the completion schedule or pricing.
- B. Closeout. The Subcontractor shall, as a condition of full payment, assist FRA after the completion of the work in accomplishing the administrative closeout of this BOA, including, as necessary or required, the furnishing of documentation and reports, the disposition of property, the disclosure of any inventions, the execution of any required assignment or release documents, the performance of any audits, and the settlement of any interim or disallowed costs.

ARTICLE 7 – FURNISHED AND ACQUIRED PROPERTY

- A. FRA Furnished Property. FRA may furnish U.S. Government or FRA property for use as required under this BOA. Any such furnished property will be identified in individual task orders.
- B. Subcontractor Acquired Property. The Subcontractor may be authorized to acquire, fabricate, or provide the tangible personal property items on task orders issued under this BOA. The

Subcontractor shall not acquire other tangible personal property for use under this BOA without FRA Procurement Representative's advanced written approval.

When authorized to acquire property, the Subcontractor shall notify FRA Procurement Representative upon receipt of Subcontractor Acquired Property (SAP). These notifications shall include a detailed description of each item to include the manufacturer, model & serial numbers, the quantity, the acquisition cost (including transportation and other related costs such as installation), dates of acquisition and receipt, and the specific location of the equipment (building and room numbers).

- C. Disposition. All FRA Furnished Property and Subcontractor Acquired Property associated with task orders issued against this BOA shall be identified, utilized, accounted for, and protected in accordance with the *Property* clause incorporated in FRA Terms and Conditions for Cost Reimbursable Subcontracts (FL-202). Disposition of such property shall be as directed by the FRA Procurement Administrator. For such property, the Subcontractor shall submit, upon request, a completed *Final Property Certification* form, as incorporated herein or provided, confirming the property disposition.

ARTICLE 8- REPORTS

A. Types of Reports

The Subcontractor shall prepare and submit reports as required on a task order basis. Such reporting requirements will be clearly identified in individual task orders.

- B. Submittal. Reports shall be separately submitted to the following recipients at the following email addresses:

<u>Recipient</u>	<u>Email</u>
Fermi Technical Representative (Joshua Willhite)	willhite@fnal.gov
FRA LBNF Procurement Manager (James Hohbein)	hohbein@fnal.gov

ARTICLE 9-INSURANCE

A. Types of Coverage

The Subcontractor shall at its expense obtain, keep in force, and maintain insurance to cover its performance under task orders issued under this BOA of the types and in the amounts set forth below. Such insurance shall be maintained in full force and effect during the performance of work required by this BOA.

<u>Commercial General Liability Insurance</u>	<u>Minimum Limit</u>
• Per Occurrence	\$2,000,000
• Products/Completed Operations Aggregate	\$2,000,000
• Personal and Advertising Injury	\$1,000,000
• General Aggregate	\$5,000,000

<u>Business Automobile Liability Insurance</u>	<u>Minimum Limit</u>
• Per Occurrence	\$1,000,000

Workers' Compensation as required under South Dakota or other applicable State Law

Employer's Liability Insurance with a minimum limit of \$500,000 per accident and employee.

<u>Pollution Liability Insurance</u>	<u>Minimum Limit</u>
• Per Occurrence	\$2,000,000
• General Aggregate	\$2,000,000

B. Coverage Requirements

The commercial general liability and business automobile liability insurance policies shall provide by appropriate language that Fermi Research Alliance, LLC, the University of Chicago, Universities Research Association, Inc., and the United States Government are additional insureds with respect to performance of the Task Orders/Releases against this BOA by the Subcontractor and its lower-tier subcontractors and consultants.

The insurance afforded by such policies shall be primary insurance and non-contributory with any insurance or program of self-insurance maintained of the additional insureds.

All rights of the insurer for contribution from other insurers of Fermi Research Alliance, LLC, the University of Chicago, Universities Research Association, Inc., and the United States Government are waived.

The required insurance shall be obtained from insurance companies satisfactory to Fermi Research Alliance, LLC. FRA reserves the right to approve the form and substance of all policies issued in satisfaction of this requirement.

The insurance shall not be written on a claims made form or be subject to a self-insured retention without the written approval of the FRA Procurement Representative. If insurance on a claims made form is approved, it shall continue for three years following termination of this BOA and provide for a retroactive date of placement prior to or coinciding with the effective date of this BOA.

The stipulation of required insurance coverage and limits shall not in any way limit the liability of the Subcontractor under this BOA.

C. Proof of Insurance

The Subcontractor agrees to deliver to FRA at the signing and delivery of the within BOA, and in any event before any work is performed hereunder, certificates of the insurance companies as to the particulars of the insurance coverage above referred to, and such certificates shall contain a provision that such insurance will not be cancelled nor any material change made in the policies except upon not less than thirty (30) days prior notice thereof to FRA, mailed to it by registered mail, with postage prepaid, addressed to:

Fermi Research Alliance LLC
Kirk Road & Wilson Street

P.O. Box 500 – Mail Station 210
Batavia, IL 60510-0500
Procurement Department

D. Lower-Tier Subcontractor Insurance

Before permitting any sub-subcontractor to perform any work under task orders issued under this BOA, the Subcontractor shall require that such sub-subcontractor furnish satisfactory evidence that it is in compliance with the Risk Transfer Protocols and other requirements of this Article.

E. Indemnification

The Subcontractor shall hold harmless and indemnify FRA for any expense incurred or loss suffered by FRA for the failure of the Subcontractor to comply with the provisions of this Article. The Subcontractor shall accept at its own cost the defense of any of the additional insureds described above upon tender of any legal action or claim naming any of the additional insureds.

ARTICLE 10 – WAGES AND BENEFITS

- A. Davis-Bacon Act. The construction work for the Task Orders/Releases is subject to the Davis-Bacon Act and related labor standard clauses and requirements identified in the FL-3 FRA Construction Subcontract Terms and Conditions for SURF Reliability Projects in accordance with FAR Clauses 52.222-6 through 52.222-15. Certified Payrolls for each construction Task Order/Release shall be submitted on LCP Tracker.
- B. Service Contract Act. The services work for the Task Orders/Releases are subject to the Service Contract Act. The Subcontractor shall pay its service employees performing the work not less than the minimum monetary wages in accordance with the Service Contract Act of 1965, As Amended and specified in FL-4 FRA Services Subcontract Terms and Conditions for SURF Reliability Projects.

The Subcontractor shall pay its employees at least the minimum wages established by the General Wage Determination of the U.S. Department of Labor incorporated into these Task Orders/Releases and shall comply with all other related requirements.

ARTICLE 11 – LIABILITY FOR INJURIES AND DAMAGES

The Subcontractor assumes the entire responsibility and liability for losses, expenses, damages, demands, suits, and claims in connection with or arising out of any personal injury (including death), and/or damage or destruction or alleged damage to or destruction of property, sustained, or alleged to have been sustained, in connection with or arising out of the performance of the work by the Subcontractor, its agents, servants, employees, subcontractors, and consultants, save and except that the Subcontractor, its agents, servants, employees, subcontractors, and consultants shall not be liable for the sole negligence or intentional acts of FRA.

The Subcontractor shall indemnify and hold harmless FRA, The University of Chicago, Universities Research Association, Inc., and the United States Department of Energy, their officers, agents, servants, and employees from any and all liability for such losses, expenses, damages, demands, and claims, and shall defend any claim, suit, or action brought against any or all of them based on any alleged personal

injury or property damage, and shall pay any damages, costs, and expenses, including attorneys' fees, in connection with or resulting from such claim, suit, or action.

ARTICLE 12– NON-WAIVER OF DEFAULT

Any failure by FRA at any time, or from time to time, to enforce or require the strict keeping and performance of any of the terms or conditions of this BOA shall not constitute a waiver of such terms or conditions and shall not affect or impair such terms and conditions in any way nor the right of FRA at any time to avail itself of any remedies as it may have for any breach of such terms or conditions.

ARTICLE 13 INCORPORATED DOCUMENTS

The following documents are hereby incorporated as a part of this BOA:

- Exhibit A – Basic Ordering Agreement/Schedule of Articles
- Exhibit B – Statement of Work
- Exhibit C1 – FL-1 FRA General Provisions for SURF Reliability Projects
- Exhibit C2 – FL-3 FRA Construction Subcontract Terms and Conditions for SURF Reliability Projects
- Exhibit C3 – FL-4 FRA Services Subcontract Terms and Conditions for SURF Reliability Projects
- Exhibit C4 – FL-202 FRA Terms and Conditions for Cost Reimbursable Subcontracts - SURF Reliability Projects
- Exhibit D –FL-100B Intellectual Property Clauses for Construction Subcontracts, “Non-Standard” Item Supply Subcontracts, and Non-R&D Service Subcontracts where technical data are expected to be first produced
- Exhibit E – FL-55 Small Business Subcontracting Plan
- Exhibit F – FL-57B Organizational Conflicts of Interest
FL-11 Organizational Conflict of Interest (OCI) Certification
- Exhibit G – FL-6 Representations, Certification and Acknowledgement
FL-6, Addendum 1 Cost Accounting Standards (Notices and Certifications)

ARTICLE 14– GENERAL PROVISIONS

- A. The FAR and DEAR clauses listed in the *Clauses Incorporated by Reference* (Clause 15 of FRA Terms and Conditions for Cost Reimbursable Subcontracts [FL-202]) shall be applicable to this Subcontract based on the value of the Subcontract, the status of the Subcontractor, and the nature and location of the work, as indicated in the FRA Terms and Conditions for Cost Reimbursable Subcontracts (FL-202).
- B. Certain cost accounting standards requirements (i.e., modified coverage) apply to this Subcontract. Accordingly, FAR 52.230-3 *Disclosure and Consistency of Cost Accounting Practices* and FAR 52.230-6 *Administration of Cost Accounting Standards* clauses, incorporated into FRA Terms and Conditions for Cost Reimbursable Subcontracts (FL-202) by reference, shall apply.

(END OF SCHEDULE OF ARTICLES)