U.S. DEPARTMENT OF ENERGY

FIELD WORK PROPOSAL

1. WORK PROPOSAL NO.:	2. REVISION NO.:	3. DATE PREPARED:
JLAB-HEP-XX	2	2/06

4. WORK PROPOSAL TITLE:	5. BUDGET AND REPORTING CODE:
ILC 9-Cell Cavity EP Processing and Preparation	

6. WORK PROPOSAL TERM: Two years

7. HEADQUARTERS OFFICE PROGRAM MANAGER:	8. HEADQUARTERS ORGANIZATION:
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9. DOE FIELD ELEMENT WORK PROPOSAL REVIEWER:	10. DOE FIELD ELEMENT:
Jim Turi, (757) 269-7146, turi@jlab.org	Oak Ridge Operations

11. CONTRACT WORK PROPOSAL MANAGER:	12. CONTRACTOR NAME:
Swapan Chattopadhyay, (757)269-7001 swapan@jlab.org	Southeastern Universities Research Association, Inc., Thomas Jefferson National Accelerator Facility (Jefferson Lab)

13. Work Proposal Description

Principal Investigators: John Mammosser

This work is in support of the FNAL cryomodule fabrication and development plans. This proposal is to perform the necessary steps to process, qualify and prepare eight (8) ILC 9-cell cavities for string assembly at FNAL. Electropolish process development for optimum surface properties will continue in parallel. All procedures and process data will be documented. Fermilab personnel will participate and be trained during this process.
Funding for this work will be via MoU from Fermilab.

14. CONTRACTOR WORK PROPOSAL MANAGER	15. OPERATIONS OFFICE REVIEW OFFICIAL
Signature Date	Signature Date

16. DETAIL ATTACHMENTS

____ a. Facility Requirements	____ f. Technical Progress	__x__ k. Deliverables
____ b. Publications	____ g. Future Accomplishments	____ l. Performance measures/expectations
__x__ c. Purpose	__x__ h. Relationships to Other Projects	____ m. ES&H Considerations
____ d. Background	____ i. NEPA Projects	____ n. Human/Animal Subjects
__x__ e. Approach	____ j. Milestones	____ o. Other (Specify)

WORK PACKAGE REQUIREMENTS FOR OPERATING/EQUIPMENT
OBLIGATIONS AND COSTS

CONTRACTOR NAME:	WORK PROPOSAL #:	REV. #:	DATE PREPARED:
Southeastern Universities Research Association, Inc. Thomas Jefferson National Accelerator Facility (Jefferson Lab)	JLAB-HEP-XX	1	2/06

	FY 2006 Allocated	FY 2007 Target	FY2008 Target	FY 2007 Requirements	FY 2007 Authorized
17. STAFFING (IN STAFF YEARS)					
a. SCIENTIFIC		1.0			
b. OTHER DIRECT		1.0			
c. TOTAL DIRECT		2.0			
18. OPERATING EXPENSE (in thousands)					
a. TOTAL OBLIGATIONS (B/A)		425			
b. TOTAL COSTS (B/O)		425			
19. EQUIPMENT (in thousands)					
a. EQUIP OBLIGATIONS (B/A)					
b. EQUIPMENT COSTS (B/O)					

20. MILESTONE SCHEDULE (Tasks)	Dates	Proposed $	Authorized $
8 Cavities Processed and Shipped	10/07	425	

21. REPORTING REQUIREMENTS (Description):

Quarterly reporting

TITLE:	BUDGET AND REPORTING CODE	DATE PREPARED
ILC CRYOMODULE VALUE ENGINEERING		7/05
WP NUMBER	CONTRACTOR NAME:	
JLAB-HEP-XX	Southeastern Universities Research Association, Inc., Thomas Jefferson National Accelerator Facility (Jefferson Lab)	

16. c. Purpose

This work is to process, qualify and prepare eight (8) ILC 9-cell cavities for string assembly at FNAL. This string is intended for the second type 4 cryomodule to be assembled at Fermilab. Electropolish process development for optimum surface properties will continue with the aim of achieving 35 MV/m performance. This work is a continuation of FY06 activities funded by MOU with Fermilab.

16. e. Approach

Cavity Qualification: These cavities will be tuned to frequency, chemically treated be means of electropolish, high pressure rinsed and dried, assembled in Class 10 cleanroom, and RF qualified at cryogenic temperatures in vertical dewar. Best procedures will be implemented and performance will be best effort towards the goal of 35MV/m. RF test cycles will be repeated as necessary to obtain best performance under given timeline and funding.

Addition of the Helium Vessel: The helium vessels will be received from FNAL, mechanically inspected, cleaned, assembled and welded to the cavities.

Input coupler: The input coupler will be cleaned and assembled to the cavity in Class 10 conditions and the cavities shipped to FNAL.

16. h. Relationships to Other Projects

This work is in support of Fermilab's ILC project, specifically the fabrication of a type 4 cryomodule to be installed in the SMTF. Electropolish procedures developed during this work will be made available to Fermilab for possible implementation in an industrial facility for large-scale production in the future. This project is complementary to the university based proposal for detailed understanding and development of the electropolish method for niobium.

16. k. Deliverables

8 ILC-style cavities with helium vessels, electropolished, dressed and with FPC assembled.
EP process parameters and documentation.