U. S. DEPARTMENT OF ENERGY
FIELD WORK PROPOSAL

**SAMPLE**

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| 1. B&R No. KB-02-02-01-1 | 2. Contractor No.: AD-003 | 3. Date Prepared: 03/01/2000 | 4. Task Term: Begin: Continuing End: Open |
| 5. Work Proposal No.: 13W0003 | | 6. Work Authorization No.: KECH130 | |

7. Title: RHIC COLLIDER-ACCELERATOR OPERATIONS

8 Principal Investigator(s) : Roser, Thomas 631-344-7084

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| 9 Headquarters/Operations Office Program Manager: S.G. Steadman | 12. Headquarters Organization: Office of Science | 15. HQ Organizational Code: SC |
| 10. Operations Office Work Proposal Reviewer: | 13. Operations Office: CHICAGO | 16. DOE Organizational Code: CH |
| 11. Contractor Work Proposal Manager: Lowenstein, Derek, I. 631-344-4611 | 14. Contractor Name: BROOKHAVEN SCIENCE ASSOCIATES BROOKHAVEN NATIONAL LABORATORY | 17. Contractor Code: BN |

18. Work Proposal Description (Approach, anticipated benefit in 200 words or less, suitable for public release) :

The RHIC Facility consists of a Collider that utilizes the existing chain of accelerators (Tandem van de Graaff/LINAC/Booster Synchrotron/AGS) as injector and accelerates heavy ions to energies of 100 x 100 GeV/nucleon for gold ions using 3.8 km circumference superconducting accelerator/storage rings, four detectors for the initial round of the physics program, and a large scale computing facility to support the physics program.

The collider-accelerator operations funding will support manpower, materials, and electric power cost for

- the operation and maintenance of the accelerators, including Tandem van de Graaff/LINAC, Booster Synchrotron, the AGS, and the RHIC Collider
- Repair of collider superconducting magnets

The primary physics objective of RHIC is to investigate the creation of quark-gluon plasma, a state of nuclear matter supposed to have existed at 1 μsec after the Big Bang. The other objective is to collide polarized proton beams at energy up to 500 GeV for spin physics research. In addition, because of its versatility the RHIC/AGS accelerator complex can provide a number of other physics capabilities. These capabilities comprise a fixed target program using the AGS with proton beams of energy up to 28 GeV and intensities of approaching $10^{14}$ protons/pulse and heavy ions using Au beams with energy up to 11 GeV/nucleon; and the provision of test beams for general detector development and calibrations. Exploitation of these additional capabilities is not included in the scope of this FWP.

19. Principal Investigator (s) :

Signature(s) Thomas Roser — 03/01/2000 Date

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| 20. Contractor Work Proposal Manager: Signature Derek Lowenstein — 03/01/2000 Date | 21. Operations Office Review Official: Signature — Date |

22. Detail Attachments:

(x) a. Purpose
(x) b. Approach
(x) c. Technical progress
(x) d. Future accomplishments
( ) e. Relationships to other projects
( ) f. Explanation of milestones
( ) g. Other (Specify Topic)