SAND2008-4045P

Sandia National Laboratories
Pulsed Power Sciences

Experiment Proposal Package for Z Facility Experiments for The Period January 5, 2009 – June 30, 2009

Date Issued: June 16, 2008

Applications Due: August 1, 2008

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Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

PART I – Z FACILITY PROGRAM DESCRIPTION

A. Background.

Z is a megajoule-level pulsed power facility at Sandia National Laboratories (SNL) that, after ten years, has grown into a multifaceted resource for the Stockpile Stewardship Program (SSP) of the National Nuclear Security Administration (NNSA) of the Department of Energy. Z produces intense x-rays and magnetic fields for experiments in weapons science and inertial confinement fusion to support the mission of NNSA. Specifically, Z supports the missions of the Science Campaigns, Engineering Campaigns and the Inertial Confinement Fusion Campaign, as well as basic high energy density science research. Proposals by the national laboratories (defined to be AWE, LANL, LLNL, and SNL) are solicited for experiments in these mission areas for the period January 5, 2009 to June 30, 2009. A total of 22 Z facility shot weeks will be available for these experiments.

For information about the Z facility and the solicitation process please contact:

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B. Solicitation Schedule.

Event	Target Date
Call for proposals	June 16, 2008
Proposals due (via pdf files)	August 1, 2008
Distribution of shots to projects	September 1, 2008
Experiments conducted	January 5, 2009 to June 30, 2009

Unclassified proposals must be received in full by close of business on August 1 at Sandia National Laboratories at the following address:

zproposals@sandia.gov

Classified proposals are also due on August 1 and must be submitted **only on the Classified Network** to:

zproposals_s@sandia.gov

PART II – SHOT ALLOTMENT (AWARD) INFORMATION

A. Type of Award Instrument.

Only Sandia National Laboratories Z Facility time is available. Other than basic power feed hardware and limited diagnostics, there is no funding or other material support provided via this program.

B. Expected Number of Experiments.

A total allotment of approximately 22 Z facility shot weeks is available for this program.

C. Anticipated Experiment Size.

We encourage experiments that require a minimum of one week of facility time. One week of shot time consists of 3 to 5 shots depending on experiment complexity.

D. Period of Performance.

The program is for Z facility shots from January 5, 2009 to June 30, 2009.

PART III – Eligibility Information

A. Eligible Applicants.

Only proposals led by scientists from AWE, LLNL, LANL, and SNL will be considered for this program.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. CONTENT AND FORM OF APPLICATION

1. COVER.
The cover page of the proposal shall include all the information requested in Appendix A.

2. FACILITY REQUIREMENTS/PROPOSAL SUMMARY
The second page of the proposal shall be the filled-out Proposal Summary Form included in Appendix A. If the project requires extraordinary support beyond the normal support for a Z experiment, such requirements and the source of such support must be identified.

3. PROJECT NARRATIVE
The project narrative should not exceed **5** pages, including figures.

The project narrative must include the following sections:

Project Objectives. This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.

Programmatic Impact. This section should explain the impact of the experiment on programmatic goals and objectives.

Project Timetable. This section should outline as a function of time, year by year, all the important activities or phases of the project, including any activities planned beyond the project period (e.g. data analysis and submission of publications). Successful applicants must use this project timetable to report progress.

Experiment Requirements. Information on the technical requirements to complete a successful experiment.

1. Diagnostics requirements, including both standard and new diagnostics
2. Machine configuration, including: voltage, desired current, pulse length, and pulse shape.
3. Load & Target hardware requirements.
4. Environment, Safety, and Health Hazards such as Beryllium, heavy metals, gases, explosives, etc.

Project Team & Roles. List project team members and provide a short description of the work to be performed by each participant/investigator.

Previous Work If Applicable. Provide a list of milestones, scientific advances, and publications citing the project team's previous work in this area.

B. SUBMISSION DATES AND TIMES.

1. **Application Due Date**.

Applications must be received in full by close of business on August 1, 2008. You are encouraged to transmit your application well before the deadline as they will be reviewed as they are received. APPLICATIONS RECEIVED AFTER THE DEADLINE MAY NOT BE REVIEWED OR CONSIDERED FOR AN EXPERIMENTAL SERIES DURING THIS PERIOD.

APPLICATIONS MUST BE SUBMITTED VIA e-MAIL

Submit unclassified electronic applications in **pdf form** to:

zproposals@sandia.gov

Classified proposals may be submitted **only on the Classified (RED) Network** to:

zproposals_s@sandia.gov

Confirmation of receipt will be provided

Part V – APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Facility Review Criteria.

The Z Facility Advisory Committee will conduct the review of all proposals to assess the feasibility of execution, impact on the facility, and operational cost.

2. Merit Review Criteria.

The technical merit and programmatic impact of each proposal will be assessed by the accountable mission area in which the proposal falls. Aspects to be reviewed by each mission area include:

(1) The overall scientific/technical merit of the project and its relevance and prospective contribution to its field of research;
(2) The scientific/technical soundness and quality of the proposed method/approach, and the feasibility/likelihood of accomplishment of the stated objectives;
(3) The competence, experience, and past performance of the proposer, principal investigator, and/or key personnel; and,
(4) The demands of the project in terms of resource requirements (equipment, beam time, etc.) and/or other requirements (facility hardware modifications, component development, etc.) vis-à-vis competing demands.

B. REVIEW AND SELECTION PROCESS.

1. Selection.

The Z Facility Director in consultation with the Pulsed Power Center Director will determine the final Z schedule and try to maximize the overall quality of work and programmatic impact within the bounds of available resources.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES.

Successful principal investigators will be notified by September 1, 2008 for experiments to be conducted starting on January 5, 2009.

PART VI – Z FACILITY CONTACTS

A. CONTACTS.

Questions relating to the Z Facility proposal submission procedures should be addressed to

Ramon J. Leeper, Manager,
Diagnostics and Target Physics Department
Telephone: (505) 845-7185
E-mail: rjleepe@sandia.gov

Appendix A

Sandia National Laboratories
Z Facility

Experiment Proposal Package
January 5, 2009 To June 30, 2009

Proposal Title:

Principal Investigator(s):

Telephone/e-mail:

Institutional Affiliation:

Address:

Submission Date: _____

Initial Experimental Proposal Summary

1. Title of experimental series:

2a. Principal experimenter:
site: phone: email:
2b. Co-PE:
site: phone: email:

3a. Mission related: (x in box)

dynamic materials	☐	**test readiness**	☐
radiation flow	☐	**pulsed power science**	☐
radiation effects	☐	**z pinch physics**	☐
pulsed power ICF	☐	**other (state category)**	

4. Summary of experimental objective(s):

5. Description of experimental approach:

6. Pulsed power parameters required (e.g., Marx charge, timing, pulse shape, etc.):

7. Sandia-supplied diagnostics required:

8. Specific user-supplied diagnostics required (describe):

9. Type and number of targets/samples including spares and a diagram of each type:

10. Total shots: ☐
If more than one series, shots by quarter:
Q2: ☐ **Q3:** ☐

11. Special considerations: (x in box)
SNM ☐ **Be** ☐ **explosive closure** ☐
other hazardous material (specify)
ride-along experiments ☐
security evaluation ☐
other (give details)

PROJECT NARRATIVE

Project Objectives:

Programmatic Impact:

Project Timetable:

Experiment Requirements:

Project Team & Roles:

Previous Work If Applicable: