

Supporting Statement A for

Survey of Principal Investigators on Earthquake Engineering Research Awards Made by the National Science Foundation, 2003-2009

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Attachment 3: Introductory Email from Contractor

Attachment 4: Reminder Email

Attachment 5: Thank You Email

A.1. Circumstances Making the Collection of Information Necessary

The Congressionally-mandated George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) was established by the National Science Foundation (NSF) in 2004 to upgrade, link, and integrate a system of geographically distributed experimental facilities for earthquake engineering testing of full-sized structures and their components and partial-scale physical models. Total NSF investment in NEES network operations through June 2010 has totaled approximately \$119 million. At the end of fiscal year 2014, NSF will have completed ten years of support for NEES operations and research. The purpose of the proposed information collection is to inform decision making about the need for multi-user earthquake engineering research infrastructure beyond 2014.

As is standard practice at the NSF for investments of this size, teams of site visitors have periodically been invited to assess NEES network operations. The most recent NEES site visit occurred in 2010. However, no systematic assessment of NEES network (including both operations and research) or its value as part of the NSF earthquake engineering portfolio has previously been conducted.

The NEES program is authorized under 42 USC 7708. The proposed data collection supports management of this program.

A.2. Purpose and Use of the Information

The purpose of the proposed information collection is to inform decision making about the need for multi-user earthquake engineering research infrastructure beyond 2014. The policy question NSF faces is whether a continued investment beyond 2014 in large multi-user research infrastructure (experimental facilities and cyberinfrastructure) and the associated research that utilizes these facilities is valuable, or whether instead NSF should solely fund earthquake engineering research without a direct investment in large experimental and cyber facilities. This survey is one of several activities

being undertaken by NSF in order to address this question. Where the survey will provide invaluable information is that it will allow for collection of information, in a common format, across both NEES-funded investigators and those funded through other NSF-related disciplinary programs. While information is being abstracted from administrative materials such as applications and progress reports, concerns exist regarding the extent to which these sources can provide comparable information.

A specific rationale for the survey is to assess whether the research that is being done through NEES funding utilizing the NEES experimental infrastructure is different from what is done in the rest of the earthquake engineering portfolio supported by NSF (through related disciplinary programs). If the survey identifies results suggesting that NEES-funded research is successful/having an impact and different in character from what is funded through the rest of the portfolio, then it would argue in favor of continuing to support a networked research infrastructure – especially if other assessments (such as a forthcoming report from the National Academies) identify a set of grand challenges that would continue to require a networked research infrastructure.

The results of the proposed data collection will be reviewed by a panel of distinguished experts in earthquake engineering and related fields convened by NSF to make recommendations for the future. Survey results will also be reviewed by the NSF staff members who manage the program.

The proposed data collection will consist of a survey of Principal Investigators on NSF earthquake engineering research awards, including but not limited to research awards made by the NEES program to facilitate use of the NEES network and infrastructure. Categories of information to be collected from these individuals include: 1) novelty of research questions and approach; 2) access to and use of specific types of research infrastructure (including those provided by the NEES network); 3) incorporation of education, outreach, and training activities; 4) number and diversity of participants in funded research activities; and 5) outputs and outcomes of funded research activities.

A.3. Use of Information Technology and Burden Reduction

New data collection for the purpose of the evaluation will consist of a census survey of Principal Investigators on NSF recent earthquake engineering research, including but not limited to research awards made by the NEES program to facilitate use of the NEES network and infrastructure. The survey will be administered online using appropriate information technology. In particular, the survey software will be programmed to skip questions that are not relevant to a particular respondent based on previous responses.

A.4. Efforts to Identify Duplication and Use of Similar Information

Every effort has been made to identify information relevant to the program that can be collected from existing sources rather than from the survey. Existing sources of information to be tapped for relevant information as part of the larger study include: 1) NEES program solicitations and other publicly-available documents that describe the NEES program and other earthquake engineering resources; 2) applications for funding submitted to NSF by investigators in the field of earthquake engineering; 3) previous surveys of NEES participants conducted at the annual NEES conference and by an SGER awardee in February 2009⁰; 4) records of use maintained by the NEES network and by the individual facilities; 5) NSF administrative databases; and 6) public and commercial databases for information on research outputs such as publications and patents.

A.5. Impact on Small Businesses or Other Small Entities

No small businesses will be involved in this study.

A.6. Consequences of Collecting the Information Less Frequently

This will be a one-time only data collection.

A.7. Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

⁰ Ixchel M. Faniel, February 2009. Unrealized Potential: The Socio-Technical Challenges of a Large Scale Cyberinfrastructure Initiative. University of Michigan School of Information. Available online at: <http://deepblue.lib.umich.edu/handle/2027.42/61845>; accessed 9/28/10.

The proposed data collection fully complies with all guidelines of 5 CFR 1320.5.

A.8. Comments in Response to the Federal Register Notice and Efforts to Consult

Outside Agency

As required by 5 CFR 1320.8(d), comments on the information collection activities as part of this study were solicited through publication of a 60 Day Notice in the Federal Register on October 22, 2010 (volume 75, number 204, page 65385). No comments were received from members of the public.

For outside technical expertise, NSF has consulted with the Science and Technology Policy Institute (STPI) at the Institute for Defense Analyses (IDA), a federally-funded research and development center that will support the data collection as well as the expert panel process for which the data collection will be an input. The staff at STPI/IDA includes experts in evaluation of federal research and development programs as well as geophysical engineering. Staff members consulted regarding data collection instruments, survey methodology, and study design include:

- Dr. Marius Vassiliou, Research Staff Member, Institute for Defense Analyses (703-845-4385)
- Dr. Gina Walejko, Research Staff Member, Science and Technology Policy Institute (202-419-5410)
- Dr. Brian Zuckerman, Research Staff Member, Science and Technology Policy Institute (202-419-5485)

A.9. Explanation of Any Payment or Gift to Respondents

No payment or gift will be made to respondents as a part of this study.

A.10. Assurance of Confidentiality Provided to Respondents

Data gathered as part of this survey will be identifiable by the name of the respondent. Participants will be informed in the introductory letter (Attachment 3) that the information they provide will be kept confidential except as required by law, that data collected from them will only be

reported by the contractor in an aggregate form, and that their participation is completely voluntary.

This data collection activity is exempt from 45 CFR 46 Regulations for Protection of Human Subjects because: a) the data will be reported in aggregate and therefore participants will not be identifiable directly or through identifiers linked to the subjects; and b) because any disclosure of the human subjects' responses outside the research would not place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation. Nevertheless, review and approval will be sought from the contractor's Institutional Review Board.

A.11. Justification for Sensitive Questions

The proposed survey will not contain questions of a sensitive nature. Personally Identifiable Information will be limited to the names of the respondents. To further minimize risk, each survey respondent will be assigned a numeric identifier which will be associated his or her responses in the main database instead of his or her name. The list of names and identifiers will be stored separately from the response data. All records will be destroyed at the end of the study.

A.12. Estimates of Hour Burden Including Annualized Hourly Costs

As summarized in Table A.12, the survey will be distributed to 194 potential respondents (the actual number of unique individuals invited to participate will be 172, but a small number of individuals with multiple funded awards will be asked to respond separately for each award). The expected burden for survey participants will be approximately 30 minutes. The anticipated total annual burden to respondents is therefore 97 hours. Assuming an average hourly rate of \$38.94 (based on an average annual salary for US researchers of \$81,000), the annual (and total) cost to respondents is estimated at \$3,777. This burden estimate conservatively assumes a 100% survey response rate; the anticipated response rate is 80%. There are no Capital Costs to report.

Table A.12. Annualized Estimate of Burden

Category of Participant	Expected number of	Responses per	Average burden	Estimated annual	Estimated hourly	Estimated annual cost to

	participants	participant	hours per response	burden hours	wage	participants
NEES-R PIs	98	1	0.5	49	\$38.94	\$1,908
Other Earthquake Engineering PIs	96	1	0.5	48	\$38.94	\$1,869
Total	194	-	-	97	-	\$3,777

A.13. Estimate of Other Total Annual Cost Burden to Respondents or Recordkeepers

There are no Operating or Maintenance Costs to report.

A.14. Annualized Cost to the Federal Government

In addition to the cost to respondents described in A.12, total annual cost to the Federal Government for this data collection includes the services of a contractor to collect the data and government staff time to manage and support the contractor. The annual cost for the contractor, excluding data analysis and report preparation, is estimated at \$50,000. It is estimated that approximately two weeks of NSF staff time will be associated with the conduct of this study. Using an average salary of \$80,000 for NSF staff, this adds \$3,077 in costs.

Thus, total annual cost to the Federal Government is estimated at \$56,854 (Table A.14). Since data collection will be completed in one year, the annual and total anticipated costs are the same.

Table A.14. Total Cost Burden of Information Collection

Annualized Cost to Respondents (from A.12)	\$3,777
Annual Cost of Contractor’s Services	\$50,000
NSF Staff Time	\$3,077
Total	\$56,854

A.15. Explanation for Program Changes or Adjustments

This is a new collection of information.

A.16. Plans for Tabulation and Publication and Project Time Schedule

Planning for this study, including recruiting the expert panel, began in September 2010.

Assuming that clearance is granted in March 2011, the proposed survey will be fielded in April 2011. Results will be tabulated, and descriptive statistics will be calculated. Given the nature of the information to be collected, analytical statistics will be neither feasible nor desirable. A draft report on the survey findings will be developed for the expert panel by May 2011. The survey results will likely be incorporated into a broader report summarizing the expert panel’s findings and recommendations, which will be delivered to NSF by December 2011. The estimated project schedule is summarized in Table A.16.

Table A.16. Estimated Project Schedule

Activity	Anticipated Time Period
Collect and analyze data from existing sources	October 2010-January 2011
Field survey	Immediately after OMB approval (April 2011)
Analyze data and develop draft report for expert panel	May 2011
Final panel report to NSF	December 2011

A.17. Reason(s) Display of OMB Expiration Date is Inappropriate

No exceptions are sought; the OMB Expiration Date will be displayed on the survey instruments.

A.18. Exceptions to Certification for Paperwork Reduction Act Submissions

No exceptions are sought from the Paperwork Reduction Act or from form 83-I.