



National Science Foundation
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NSF 12-107

Dear Colleague Letter - Operations and Management of Earthquake Engineering Research Infrastructure during FY 2015 - FY 2019

The George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) will complete ten years of National Science Foundation (NSF) support for operations and research at the end of fiscal year (FY) 2014. As was stated in the [NSF 10-071](#) Dear Colleague Letter on "Plans for the Future of Earthquake Engineering Research Infrastructure Support beyond 2014," NSF commissioned two external studies to identify future grand challenge research in earthquake engineering, and to make recommendations on how NSF might support earthquake engineering research and associated research infrastructure. After careful consideration of the findings from these two studies, NSF is now able to inform the community of its plans for future support of earthquake engineering research starting in FY 2015. Realizing the continuing need for large-scale experimental research facilities to enable grand challenge research advancements for the earthquake engineering field, the NSF Directorate for Engineering (ENG) will continue to support research infrastructure in this area.

To ensure that the nation is receiving the greatest value for its investment in earthquake engineering research infrastructure and to adhere to the National Science Board (NSB) Statement on Competition, Recompensation, and Renewal of NSF Awards ([NSB-08-16](#)), ENG intends during FY 2013 and FY 2014 to recomplete all phases of earthquake engineering research infrastructure operations for support during FY 2015 - FY 2019, to create the "NEES2" research infrastructure. Recompeted tasks will include the management headquarters, cyberinfrastructure, experimental facilities, and education, outreach and training activities. All recompeted tasks will be supported under one cooperative agreement for the management of NEES2 operations for FY 2015 - FY2019.

NSF's plan for support for earthquake engineering research infrastructure will be as follows: **NEES2 Operations FY 2015 - FY 2019**: Under the NEES2 operations cooperative agreement, ENG will support **four to six** major earthquake engineering experimental facilities that provide the following key attributes: unique, large-scale experimental capabilities located in the United States critical for addressing earthquake engineering research grand challenges; the capability to be fully operational as of July 1, 2014; and a clear strategy/plan to ensure that the facilities will effectively support a strong external user base. In addition to the experimental facilities, the other major component under NEES2 operations will be a user-driven, community cyberinfrastructure that includes an experimental data repository; computational, simulation, and collaborative tools; access to high performance computing resources; and hybrid simulation capabilities. ENG plans a solicitation to be issued on/about October 2012, with at least a 120-day window for full proposal submission. **NSF does not plan to separately compete the management headquarters, individual experimental facilities, cyberinfrastructure, and education, outreach, and training activities. Rather, the competition will consider proposals that are led by a lead organization and integrate all these components into a cohesive earthquake engineering research infrastructure for FY 2015-FY 2019 to be supported under one cooperative agreement.** Suggestions regarding evaluation criteria are welcome before August 15, 2012, and should be submitted to the NSF contact below. Contingent on availability of funds from NSF, NSF would seek approval from the National Science Board in May or July 2014 for a cooperative agreement to support NEES2

operations. A tentative timeline is shown below for community planning and will be updated in the NEES2 operations program solicitation:

Event	Tentative Date
Dear Colleague Letter Issued	July 2012
NEES2 Operations Recompetition Solicitation Issued	October 2012
Full Proposals Due	February 2013
Full Proposal Evaluation	April 2013
Site Visits	June-July 2013
Reverse Site Visit at NSF	October 2013
Request for NSB Award Approval	May or July 2014
NEES2 Operations Award Commences	October 2014

Research Planning Grants to Utilize NEES2 Experimental Facilities: During FY 2013 and FY 2014, to provide continuity in support to the earthquake engineering research community, ENG intends to support planning grants, using a revised NEES Research solicitation, to support research investigations that could eventually require use of NEES2 facilities. The planning grants could involve material and component testing and develop preliminary plans for systems level testing. As the systems level testing would require design of experimental specimens dependent on the specific NEES2 experimental facility to be used, the expectation is that all preliminary testing at other than NEES2 facilities would have been completed by FY 2014, and this research would thus be "NEES2-ready" to submit proposals in early FY 2015 to design the needed specimens to utilize the newly identified NEES2 experimental resources and complete the large-scale research component. ENG plans to issue a revised NEESR solicitation in November 2012, with at least a 90-day window for full proposal submission.

Decadal Earthquake Engineering Research Science Plan for FY 2020 - FY 2029: The 2011 National Research Council report entitled *Grand Challenges in Earthquake Engineering Research: A Community Workshop Report* (http://books.nap.edu/catalog.php?record_id=13167) identified 13 grand challenge research questions for the earthquake engineering field, organized around five major themes, and a network of 14 experimental facilities, some of which currently do not exist in the United States, to address these grand challenges. Building upon this NRC report, the development of more detailed science requirements and data products needed to address grand challenge research, the refinement of the specific capabilities for the experimental facilities to address the science requirements, and the prioritization for development of these facilities, will require longer-term planning. NSF intends to issue a program solicitation in early FY 2014 for an entity to organize the community for the FY 2020-FY 2029 decadal planning to address these science requirements, experimental capabilities, and prioritization.

NSF Contact: Questions or comments should be directed to Joy Pauschke, NEES Program Director, 703-292-7024, jpauschk@nsf.gov.

Sincerely,

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