NIST Performance Effectiveness Measures

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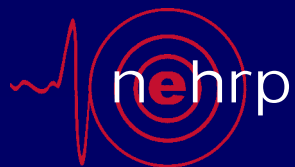
FEMA Interim Report

Report only minimally involved NIST, because of lack of ongoing research at the time of the report development.

Only stated NIST performance measure in report dealt with ICSSC mission of producing seismic safety standards for existing federally owned or leased buildings, and for guidance on the use of model codes and standards.

- ICSSC must be re-engaged. "World has changed …"

- New buildings: ASCE-7 and IBC have been updated and more universally adopted since issue was last addressed in ICSSC.

- Existing buildings: ASCE 31 and ASCE 41 have emerged since ICSSC last addressed issue (RP6).

These issues must be addressed as ICSSC is re-engaged!

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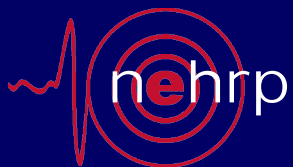
NIST Building and Fire Research Laboratory Mission

To promote U.S. *innovation* and *competitiveness* by anticipating and meeting the:

- **measurement science,**

- **standards, and**

- **technology**

needs of the U.S. building and fire safety industries in ways that enhance *economic security* and improve the *quality of life.*
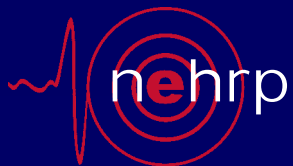
BFRL Vision

To be *the* source for creating <u>critical solution-enabling tools</u>—metrics, models, and knowledge—and promoting <u>performance-based standards</u> that are *used* by the U.S. building and fire safety industries to establish global leadership.
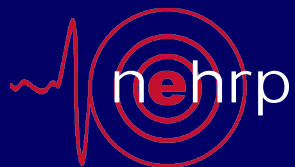
BFRL Program and Project Selection

- **Needs of Customers**
  - ➢ **Direct contacts**
  - ➢ **Workshops**
  - ➢ **Roadmaps**
  - ➢ **Authenticated Measurement Needs (MNs)**
  - ➢ **National Priorities**

- **BFRL Selection Criteria**
  - ➢ **Potential Impact and Probability of Success**
  - ➢ **Recognition of BFRL (fit to NIST mission, technical challenge)**
  - ➢ **Fully integrated with Heilmeyer Questions**
  - ➢ **Potential for Outside Funding**

- **Additional Considerations**
  - ➢ **Competence Development/Exploratory Research**

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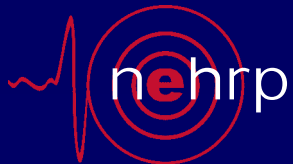
Heilmeyer Questions

- What is the problem, why is it hard?

- How is it solved today and by whom?

- What is the new technical idea; why can we succeed now?

- Why should NIST do this?

- What is the impact if successful and who would care?

- How will you measure progress?

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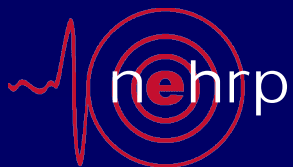
NIST Performance Measures

Project Execution Phase

- Each project is organized to accomplish key milestones that satisfy customer requirements.

- NIST Program Office is currently developing comprehensive guidelines for measuring performance of all programs that will be funded under the American Competitiveness Initiative (ACI) umbrella. Measures will be NIST-wide, but tailored to specific stakeholder requirements for each operating unit. Focus is on outputs, outcomes, and impacts.

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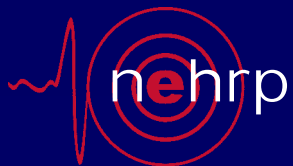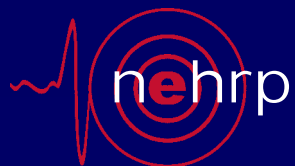
NIST Performance Measures

- **<u>Output:</u>** Tangible and quantifiable results from efforts entirely within the project/activity, not involving interactions with individuals or organizations that are not project/activity members. Examples include planning workshops and conferences, staffing and equipment plans, publications, reports, draft standards or codes, software, algorithms, assimilated data.

- **<u>Outcome:</u>** Measurable results of projects/activities. Examples include new expertise, knowledge, or capabilities; adopted codes and standards; and practitioner acceptance.

- **<u>Impact:</u>** Substantial, positive changes enabled by, or due to, project/activity outputs and outcomes, including impacts on other agencies, industry, or society. Changes are associated with external entities, not internal to the project/activity. Examples include changes in societal behavior, changes in building codes and standards, etc.

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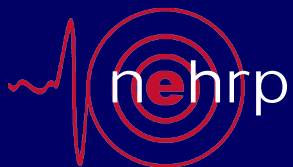
NIST Performance Measures

External Peer Review of NIST Programs

- In addition to program and project-level performance assessments, each NIST laboratory is peer-reviewed every two years by a panel from the National Research Council (NRC):

  ➢ Expert panels typically comprised of ~ 20 engineers/scientists.

  ➢ BFRL will be reviewed once again in early CY 2008.

  ➢ NEHRP research will be reviewed for first time then.

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Future
NEHRP Performance Measures Development

- Agencies intend to take this up following adoption of new strategic plan.

- Statute also requires a management (implementation) plan to accompany the strategic plan.

- Useful performance measures for program, in addition to those used within each agency to satisfy statutory requirements (Government Performance and Results Act of 1993 – GPRA), and Executive Branch (Program Assessment Rating Tool – PART), must be established.

- Program performance measures need to be consistent with agency measures and, to the extent possible, not add to current administrative burdens.

- The agencies would very much like to receive recommendations from the ACEHR regarding program performance measures!

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