



PROFILES OF RESIDENTIAL POWER CONSUMPTION

REQUEST FOR PROPOSALS FOR PROJECT CONSULTANT

BACKGROUND:

There has been a large change in the number and nature of electrical devices in the American home since the tables used by NEC® Article 220 *Branch-Circuit, Feeder and Service Calculations*, were established more than three decades ago. These tables and requirements describe typical lighting and appliance electrical loads that may be found in residences and other occupancies. These figures form the basis for sizing services and feeders to residences. The cumulative effects of the introduction of new technologies, both positive and negative, will be a change in both the average and peak power consumption. The assumptions behind the load calculation methodology of Article 220 need to be reviewed and confirmed.

RESEARCH OBJECTIVE: to validate the basis for the load calculation methodology of Article 220 of the National Electrical Code by developing baseline information on typical profiles of electrical loads in today's residences.

SCOPE/TASKS:

The Foundation is seeking a project consultant to:

- review the applicable scientific literature, historical and current code requirements;
- using available utility data in conjunction with the Project Technical Panel, develop preliminary baseline information on residential electrical consumption; and
- recommend a detailed next Phase research plan to validate the information with field measurements.

IMPLEMENTATION:

The research program will be conducted under the auspices of the Fire Protection Research Foundation and will be guided by a Project Technical Panel consisting of technical experts, to include representatives of the electrical utility industry, inspectors, contractors, manufacturers and NEC Code Making Panel 2. The Technical Panel will provide input to the project, including resources for load information, recommend contractor selection, review periodic reports of progress and research results, and review the final project report.

REPORTING and DELIVERABLES:

The project contractor will provide periodic reporting and communication on all project tasks to the Project Technical Panel and will prepare the following deliverables: a detailed work plan, and draft and final project reports.

INTELLECTUAL PROPERTY: The Research Foundation will retain rights to the project report.

PROJECT MILESTONES and Approximate SCHEDULE:

Proposals Due	April 30, 2009
Selection of Contractor	May 15
Detailed Work Plan	June 10
Draft Report	November 30
Final Report	December 31

HOW TO RESPOND:

Letter proposals (not to exceed six pages) shall be submitted electronically to Kathleen Almand, Executive Director of the Foundation, at kalmand@nfpa.org no later than 5:00 p.m. Eastern time April 30, 2009. Each proposal shall include a description of the following which will be used as the basis for proposal evaluation:

- Prior relevant experience and personnel expertise
- Scope and approach

This is a fixed cost project in the amount of \$30,000 which will include travel to one Code Making Panel or Project Technical Panel meeting.

Information on the Foundation's policies for the conduct of research can be found on our website.