

*Facilitating Fuel Cell Acceptance
through Evaluation and
Assessment*

DOE Fuel Cell Summit IV

May 11, 2000



David Conover, CEO

National Evaluation Service, Inc.

Agenda

- The need for and purpose of technology evaluation and assessment
- History of the National Evaluation Service
- What NES does
- Development of an Evaluation Protocol for stationary fuel cell power plants



National Evaluation Service, Inc.

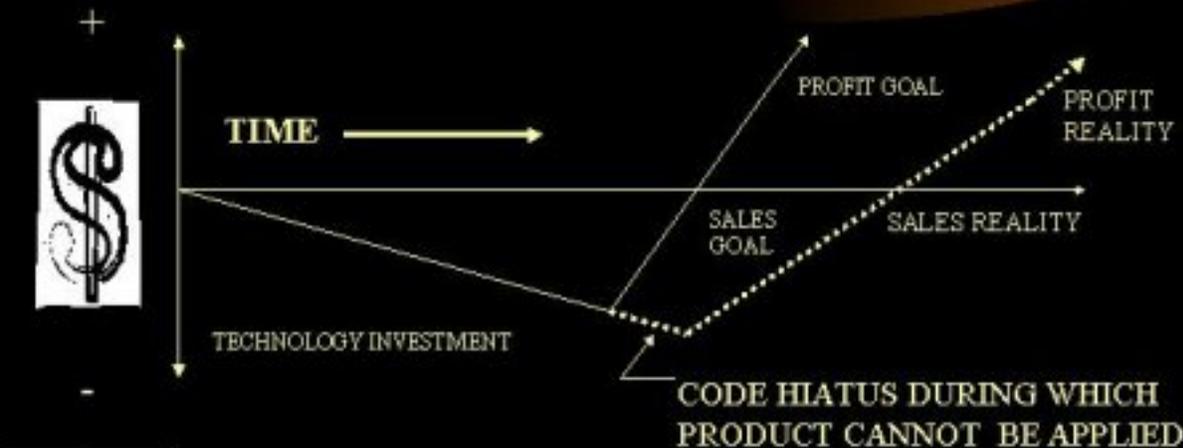
The Need for Technology Evaluation and Assessment

- Adopted codes and standards tend to lag behind new technology development
- It is difficult to easily determine code compliance for new technologies
- Each AHJ would need to expend time and resources to develop a basis for approval leading to:
 - a wide variety of interpretations
 - project delays
 - increased costs

National Evaluation Service, Inc.



Typical Product Development and Deployment Scenario



National Evaluation Service, Inc.

The Purpose of Technology Evaluation and Assessment

- Provide a defensible basis for code compliance and safety assurance
- Save time and money for technology proponent
- Make AHJ's job easier
- Facilitate technology acceptance and associated benefits of the technology



Ideal Product Development and Deployment Scenario



History of the National Evaluation Service

- NES Formed
 - Partnership of Evaluation Services of BOCA, ICBO and SBCCI in late '70s
 - Originally part of CABO
- NES Incorporated
 - Became separate entity from CABO in 1992
 - Hired full time staff in 1999
 - Acceptance initiatives for new technologies
 - Enhanced service to report holders and users



National Evaluation Service, Inc.

What NES Provides

An opportunity for 1-stop US and international approval through National Evaluation Reports that verify

- Conformance to code criteria and referenced standards
- Performance equivalency with the codes as an “alternate method or material”



National Evaluation Service, Inc.

NES National Evaluation Reports

- Provide basis for compliance with International Codes and 3 Model Codes:
 - 2000 International Building Code
 - Standard Building Code
 - Uniform Building Code
 - BOCA National Building Code
- Relationship to the ICC:
 - Exclusive endorsement of reports by the ICC
 - ICC Logo appears on all new reports



National Evaluation Service, Inc.



What an NER Provides

- Basis for uniform acceptance
- Ability for AHJ to readily accept technology, with confidence in code compliance
- Realization of technology benefits
- Makes AHJ a partner in technology acceptance

National Evaluation Service, Inc.



Where an NER Applies

- Where the adopted code is based on the BOCA NBC, SBC, UBC, or IBC
- Where the adopted code allows for alternative methods and materials
- Where local ordinances do not change the above
- Where the AHJ is not mandated to base approval on other methods



The Evaluation Process

- Addresses evaluation and assessment in a way that would satisfy the majority of AHJ's "approval" authority
- Eliminates time and effort associated with each AHJ designing an evaluation method and then performing the evaluation on an independent basis
- A benchmark for all parties to rely upon

National Evaluation Service, Inc.



The Evaluation Process

- Identify product or technology uses
- Identify types of construction with which the technology is intended to be used
- Identify code sections applicable to the technology
- Review data/identify discrepancies & concerns
- Correct discrepancies & resolve concerns
- Draft report and seek AHJ peer review (committee)
- Issue Report
- Performance feedback and report maintenance

National Evaluation Service, Inc.



Evaluation Protocol for Fuel Cells

Objectives

- Allow anyone to determine needed testing, documentation and information supporting code compliance in advance of product evaluation
- Capture and compile information to cover the full range of anticipated fuel cell products and applications covered by building codes
- Facilitate issuance of an evaluation report and national acceptance

National Evaluation Service, Inc.



Development of the Fuel Cell Protocol

- Initial draft “white paper” reviewed by selected code officials
- Revised draft “white paper” reviewed by panel of advisors (equipment manufacturers, testing laboratories, regulatory authorities, utilities, and independent consultants)
- May 9, 2000 meeting of advisory panel



Content of the Protocol

1.0 Scope

2.0 Definitions

3.0 Product Evaluation

4.0 In situ Evaluation Criteria (integration
with the site, building, thermal, and
electrical systems)

5.0 References

National Evaluation Service, Inc.



Scope of the Protocol

That necessary to facilitate acceptance
with respect to building codes

- Fuel cell power plants within the scope of building codes
- All sizes and installation scenarios
- All potential fuel sources



Next Steps in Protocol Development

- Revise protocol based on May 9, 2000 advisory panel meeting
- Secure additional input from interested and affected parties
- Revise and enhance the protocol based on input provided
- Make the protocol available and enhance over time



Securing Approval for a Fuel Cell Installation

- Where code text is specific and prescriptive simply document compliance
- Where code text is less specific or a new product or application is considered then document compliance on the basis of code equivalency through use of the protocol and an evaluation report

