AIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.

MAY 27 1994

OSTI

ENERGY EFFICIENCY IN NEW BUILDINGS:
IMPLEMENTING THE ENERGY POLICY ACT
OF 1992

M. K. Stockmeyer

March 1994

Handout

Prepared for
the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Richland, Washington 99352

MASTER

rb
DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

IMPLEMENTING THE ENERGY POLICY ACT OF 1992

UNITED STATES DEPARTMENT OF ENERGY

The Building Energy Standards Program (Program) is conducted for the Department of Energy's (DOE) Office of Codes and Standards, within the Office of Building Technologies. The Program seeks to facilitate the construction of energy efficient, cost-effective, and environmentally sound new buildings through the application of energy efficiency codes and standards.

The Energy Policy Act of 1992 (EPAct) requires that the Department of Energy support the voluntary energy standards development process, advocate the use of model energy codes, and provide technical support to states and the federal government in adopting energy efficiency standards for new buildings. In meeting these requirements, Program staff work with a wide variety of stakeholders — particularly designers, builders and code officials — to base codes and standards on the application of sound scientific principles. Further, Program staff work with individuals in the federal government, states, code development organizations, and the buildings community to deploy energy efficient technologies and encourage complementary practices throughout the design and construction processes.

The Program is divided into three major areas of research and development: residential codes and standards, commercial codes and standards, and state and federal code support. Research and new product development occurs within the residential and commercial thrusts of the Program. The scope of new product development encompasses standards research, federal codes, and accompanying implementation materials. State and federal code support staff then transfer these products to Program customers at both the state and federal levels.

Energy Efficiency in New Buildings describes the Program's 1994 activities as they relate to the Energy Policy Act of 1992. The Department of Energy also provides an annual Report to Congress identifying the state-by-state actions taken and recommendations to improve the implementation of EPAct.

The U.S. Department of Energy's implementation strategy is designed to establish an infrastructure for information flow between the Department and the buildings community at the local or municipal level.

The EPCA requires that the Department of Energy "shall provide technical assistance to States to implement the requirements of this section, and to improve and implement State residential and commercial building energy efficiency codes or to otherwise promote the design and construction of energy efficient buildings."

Even before EPCA became law, the Office of Codes and Standards provided assistance to States for certification, code advocacy and adoption, implementation, training and technical support. The passage of EPCA has greatly increased the demand for Program products and services, and the implementation of the Global Climate Change Action Plan is also expected to raise awareness concerning compliance with building energy codes and standards. In 1994, the Office of Codes and Standards will therefore concentrate its efforts on developing an infrastructure to transfer information and products, as well as direct technical assistance, to the states.

The Office will rely on programs to "train the trainer" that will leverage resources and broaden the reach of technical assistance to buildings contractors, architecture and engineering firms, utilities, code officials, and appointed and elected officials. For example, the Program is planning a series of regional workshops this summer, arranged through the Department of Energy's regional offices among others, to discuss EPCA compliance issues.

The EAct requires that before October 24, 1994, each State shall "certify to the Secretary that it has reviewed and updated the provisions of its residential building code regarding energy efficiency and made a determination as to whether it is appropriate for such State to revise such residential building code provisions to meet or exceed CABO Model Energy Code, 1992." This certification must "include a demonstration that such State's code provisions meet or exceed the requirements of ASHRAE/IES Standard 90.1-89."

As of January 1994, eight states had adopted building energy codes that meet or exceed the CABO Model Energy Code. CABO is the Council of American Building Officials.

As mentioned in the previous section, DOE is required to provide technical assistance to help states meet these EAct requirements. It will also support the Department of Housing and Urban Development (HUD) in implementing EAct provisions that require the Model Energy Code to be included in HUD Minimum Property Standards.

Several products have been developed with assistance from DOE and the Pacific Northwest Laboratory (PNL) to help the States meet the EAct residential building codes mandate and the commercial codes mandate described on the opposite page. For both residential and commercial customers, plans are underway to develop training materials and workshops that will then be offered on a regional basis. These materials and workshops will aid states in adopting and enforcing state energy codes and ensure their application to building design and construction practices.

Regarding the update of the federal version of the Residential Building Standards (10 CFR 435), EAct requires that the Department of Energy issue a Federal Register Notice of Proposed Rulemaking by October 1994 that will be available for public review and comments. The Program will fulfill this requirement based on the recently published *ASHRAE Standard 90.2-93*. Following a specified period for review and comment, a Final Rule will be issued in late 1995 or early 1996 which will be mandatory for all residential buildings built in the Federal sector. ASHRAE is the American Society of Heating, Refrigerating and Air-Conditioning Engineers.

The EPCa requires that before October 24, 1994, each state shall "certify to the Secretary that it has reviewed and updated the provisions of its commercial building code regarding energy efficiency." This certification must "include a demonstration that such State's code provisions meet or exceed the requirements of ASHRAE/IES Standard 90.1-89."

As of January 1994, eleven states have adopted codes and standards that either meet or exceed ASHRAE Standard 90.1-1989.

The nature of Program activities for residential and commercial codes is very similar, sharing a common goal of quickly developing materials to help the states and non-governmental stakeholders comply with EPCa, and updating the existing federal standards. For example, DOE will develop a Technical Support Document with a comparative analysis showing which of the States meet or exceed *ASHRAE/IES Standard 90.1-1989*. This analysis can then be used by the states to submit their certification reports to the Secretary of Energy.

Concerning the updating of the federal version of the Commercial Building Standards (10 CFR 435), EPCa requires that DOE issue a Federal Register Notice of Proposed Rulemaking by October 1994 that will be available for public review and comments. This will be done in parallel to the update and revision of the *ASHRAE/IES Standard 90.1-89*. Following a specified period for review and comment, a Final Rule will be issued in late 1995 or early 1996 that will be mandatory for all commercial buildings built in the federal sector.

Code Strategy

ASHRAE: The technical society of heating, ventilating, refrigeration and air-conditioning engineers. It sponsors numerous research programs in cooperation with universities, research laboratories and government agencies on subjects such as human and animal environmental studies, effects of air-conditioning, quality of inside air, heat transfer, and flow and cooling processes. Research and general technical programs are conducted through 90 technical committees organized in 11 sections.

BOCA: Governmental officials and agencies responsible for administering or formulating building, zoning, or housing regulations. Promotes establishment of minimum, unbiased building codes and provides services for keeping codes up-to-date.

CABO: Comprised of three model code organizations, CABO represents building officials at all levels of government. Develops, recommends, and promotes new product acceptance, uniform regulations, and adoption of model codes.

SBCCI: The SBCCI seeks to develop, maintain, and promote the adoption of the Standard Building, Gas, Plumbing, Mechanical, Fire Prevention and Housing Codes. Encourages uniformity in building regulations through the Standard Codes and their application and enforcement. Provides technical and educational services to members and others; participates in the development of nationally recognized consensus standards.

ICBO: Seeks to publish, maintain, and promote the Uniform Building Code and related documents; investigates and researches principles underlying the safety of both life and property in the construction, use, and location of buildings and related structures; develops and promulgates uniformity in regulations pertaining to building construction; educates building officials; and formulates guidelines for the administration of building inspection departments.

Staff with the Office of Building Codes and Standards work with four model code organizations to: develop code changes and advocate their approval; review and comment on changes suggested by others; identify areas needing change; and direct research to support proposed changes.

- ICBO Uniform
- SBCCI Standard
- BOCA National
- State-written

The National Conference of States on building Codes and Standards (NCSBCS) makes available to the public information on codes and standards organizations and code development processes. Information concerning state allegiance to code organizations was provided by NCSBCS.

Standards are typically contained within building codes by reference, and prescribe the minimum design or performance of a material or equipment. Most standards are written by independent non-profit service organizations. Model codes are based on published standards. Model code changes are made by members of the model code organizations, but anyone can propose changes. Model codes are updated every year, and re-published tri-annually.

Resources Available to Buildings Community

BESP Hotline

The BESP Hotline is an 800 number operated by the Building Energy Standards Program at PNL. Program staff help answer questions, provide information, and connect callers with other energy code and standard resources. Staff are prepared to address questions concerning how EPCa affects codes and standards; the status of states on adoption and implementation of energy codes and standards; and the status of national model codes. Hotline staff also make available information on software tools to aid in the design of energy efficient buildings and EPCa compliance.

Setting the Standard

Setting the Standard is published quarterly for the U.S. Department of Energy by the Building Energy Standards Program at PNL. Its purpose is to encourage information exchange among buildings industry professionals and organizations, state and local code officials, and researchers. The goal is to facilitate timely development and early adoption of the building energy conservation standards.

States Newswire for Buildings Energy Codes and Standards

States Newswire is compiled by the Building Energy Standards Program to communicate time-sensitive, critical information to state-level codes and standards officials. Each communication alerts state officials and other interested parties of a single matter that may have an impact on issues being considered at the state and local levels. A relatively new information-sharing tool, the first issue of States Newswire was distributed in February 1994 to announce ASHRAE's intent to publish Standard 90.2, "Energy Efficient Design of New Low-Rise Residential Buildings."

FOTO
FPO

The Building Energy Standards Program at the Pacific Northwest Laboratory operates a 24-hour toll-free hotline on behalf of the Office of Codes and Standards. Program staff help answer technical questions, provide general information, and connect callers to other energy code and standard resources.

FOTO
FPO

The Office of Codes and Standards produces a number of technical documents, user manuals, and other publications to help individuals design and construct energy-efficient residential and commercial buildings.

DATE

FILMED

6 / 29 / 94

END