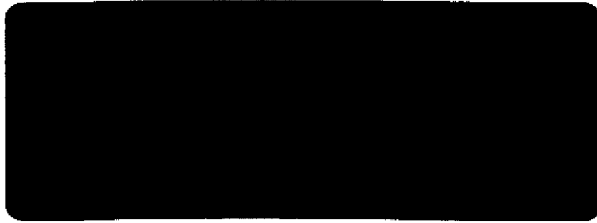


SEISMIC SAFETY

of Federal and Federally Assisted,
Leased, or Regulated

New Building Construction



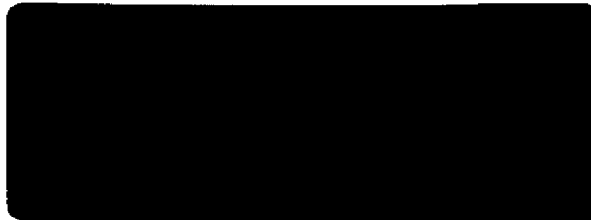
A Progress Report

on Federal Agencies'
Execution of Executive
Order 12699



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Federal Emergency Management Agency
Office of Earthquakes and Natural Hazards

Foreword

Executive Order 12699, *Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction*, directs Federal agencies to issue regulations or procedures that incorporate cost-effective seismic safety measures for all new Federal buildings and buildings that are leased, assisted, or regulated by the Federal Government. As mandated by the Executive Order, the Federal agencies report their progress in executing Executive Order 12699 to the Federal Emergency Management Agency (FEMA). The Director of FEMA reports to the President on the execution of the Order. FEMA also is required to include an assessment of the Executive Order in its report to the Congress on the National Earthquake Hazards Reduction Program (NEHRP).

This report, *Seismic Safety of Federal and Federally Assisted, Leased, or Regulated New Building Construction: A Progress Report on Federal Agencies' Execution of Executive Order 12699, Volume I*, includes the assessment of agency progress, as reported in the biennial report to the Congress on the NEHRP. A more detailed version of the assessment of agency progress is provided in the second volume to this report. The second volume also contains the Executive Order, individual agency progress reports, the format for reporting to FEMA, and the progress assessment criteria.

Assessment of Agency Progress

**Seismic Safety of Federal and Federally Assisted, Leased, or Regulated
New Building Construction:**

A Progress Report on Federal Agencies' Execution of Executive Order 12699

I. Executive Order 12699

A. Introduction

Substantial seismic safety measures for new Federal buildings are required by Executive Order 12699, *Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction*, issued on January 5, 1990. Executive Order 12699 directs Federal agencies to issue regulations or procedures by 1993 that incorporate cost-effective seismic safety measures for all new Federal buildings and buildings that are leased, assisted, or regulated by the Federal Government. It is expected that the execution of Executive Order 12699 by Federal agencies will result in a significant number of all newly constructed buildings being seismic resistant within the next 25 years.

Federal Government leadership in seismic safety with its own buildings, and those which it leases, assists, or regulates, should rapidly encourage governmental jurisdictions throughout the nation to adopt and enforce adequate seismic safety codes, or risk losing Federal financial assistance and guarantees for the construction of homes and other buildings. The strong tie of seismic safety requirements to the availability of Federal funds for construction is expected to strongly motivate local governments and private sector building designers and contractors to update their codes and practices.

This volume of *Seismic Safety of Federal and Federally Assisted, Leased, or Regulated New Building Construction: A Progress Report on the Federal Agencies' Execution of Executive Order 12699* contains a brief assessment and summary of Federal agency activities in the execution of Executive Order 12699 during Fiscal Year (FY) 1991 and 1992. A more detailed version of the assessment is provided in the second volume to this report. The second volume also contains the Executive Order; individual agency reports; the format for reporting to the Federal Emergency Management Agency (FEMA); and the progress assessment criteria.

B. Requirements

Design and Construction Standards and Practices

Executive Order 12699 reinforces the requirements of Public Law 100-678, *A Bill To Improve the Efficiency and Effectiveness of Management of Public Buildings*, which directs the General Services Administration (GSA) or any other Federal agency to comply with nationally recognized model building codes in the construction or alteration of buildings. Under the Executive Order, each affected Federal agency is independently responsible for ensuring that appropriate seismic design and construction standards are applied to new building construction under its jurisdiction. Section 3 of the Executive Order requires that nationally recognized private sector standards and practices, *i.e.*, nationally recognized model building codes, be used, unless the agency finds that none is available to meet its requirements. Section 4(a) of the Order makes the Interagency Committee on Seismic Safety in Construction (ICSSC) responsible to FEMA for recommending seismic design and construction standards and practices that are appropriate for implementing the Order.

In response to this requirement, the ICSSC developed its *Recommendation of Design and Construction Practices in Implementation of Executive Order 12699 by the Interagency Committee on Seismic Safety in Construction to the Federal Emergency Management Agency*, March 4, 1992. This recommendation is contained in RP 2.1-A, *Guidelines and Procedures for Implementation of the Executive Order on Seismic Safety of New Building Construction*, June 1992, a guidance document prepared by the ICSSC to assist Federal agencies in their implementation of the Order. In this document, the ICSSC recommends the use of the most recent edition of those standards and practices that are substantially equivalent to or exceed the seismic safety level in the most recent or immediately preceding edition of the *National Earthquake Hazards Reduction Program (NEHRP) Recommended Provisions for the Development of Seismic Regulations for Buildings*. The *NEHRP Recommended Provisions* were developed as nationally applicable seismic safety guidelines suitable for use by national standards and model code agencies and by legislative bodies.

The ICSSC, with funding from FEMA and through the National Institute of Standards and Technology (NIST) as its Technical Secretariat, engaged the Council of American Building Officials (CABO), to conduct a comparative study of four model codes (the Uniform Building Code (UBC), the National Building Code (NBC), the Standard Building Code (SBC), and the CABO one- and two-family dwelling codes) with the 1988 edition of the *NEHRP Recommended Provisions*. The result was published in a report, NIST GCR 91598, *Assessment of the Seismic Provisions of Model Building Codes*.

The ICSSC *Recommendation* identifies the following model codes as substantially equivalent to the *NEHRP Recommended Provisions* on the date of issuance of the ICSSC *Recommendation*.

- 1991 Uniform Building Code of the International Congress of Building Officials (ICBO)
- 1992 Supplement to the Building Officials and Code Administrators (BOCA) National Building Code
- 1992 Amendments to the Southern Building Code Congress (SBCC) Standard Building Code

Now that all three principal model building codes in the nation are substantially equivalent to the *NEHRP Recommended Provisions*, their use will facilitate the incorporation of seismic safety measures, particularly in regions not aware of seismic hazards.

Executive Order 12699 provides that local building codes may be used by Federal agencies if the codes have been determined by the agency or the ICSSC to provide adequately for seismic safety. However, each agency that decides to accept local building codes as part of its seismic safety program should institute a procedure for their evaluation. Moreover, the evaluation criteria and procedures for local codes should be established at the department level to ensure uniformity within a program and among related or similar agency programs. To assist the Federal agencies in accomplishing this goal, NIST, with funding provided by FEMA, contracted with the National Conference of States on Building Codes and Standards, Inc. (NCSBCS), to conduct a study on the status and enforcement of seismic design and construction provisions adopted by state and local jurisdictions. The result of the study was published in a report, NIST GCR 91599, *Seismic Provisions of State and Local Building Codes and Their Enforcement*.

Special seismic standards and practices also may be used for unique agency missions, such as programs involving new construction to house hazardous materials, valuable property, or special populations, including persons with disabilities, persons requiring health care, or persons held against their will.

Regulations or Procedures

A key provision of Executive Order 12699 is the requirement governing the development of regulations or procedures. Section 4(b) of the Order requires that each agency issue or amend existing regulations or procedures to comply with the Order by January 5, 1993, and plan for their implementation through the usual budget process. In addition, Section 8(a) of Public Law 101-614, the *National Earthquake Hazards Reduction Program Reauthorization Act*, states that the President shall ensure the issuance by all Federal agencies of final regulations required by Section 4(b) of the Order before February 1, 1993. The Executive Order also requires that each Federal agency review, within a period not to exceed 3 years,

regulations or procedures to assess the need to incorporate new or revised standards and practices.

It is important to note that Executive Order 12699 does not allow a reduction in the stringency of existing seismic safety programs, and that existing programs meeting the requirements of the Executive Order are endorsed.

Assessment and Reporting on Agency Execution of the Order

Each Federal agency is independently responsible for ensuring the application of appropriate seismic safety design and construction standards for new building construction. Executive Order 12699 does not provide any one agency with oversight or enforcement responsibilities; however, the Order does give FEMA an execution assessment and reporting role. Specifically, the Order requires that FEMA request from each agency affected by the Order information on the status of its procedures, progress in its implementation plan, and the impact of the Order on its operations. The Director of FEMA is responsible for reporting to the President on the execution of the Order, and for including an assessment of the execution of the Order in its biennial report to the Congress on the NEHRP.

Under the Order, the ICSSC, using consensus procedures, is responsible to FEMA for recommending for adoption the cost-effective seismic design and construction standards and practices described above. In addition to the *ICSSC Recommendation*, the ICSSC has developed a model preamble for the development of rules and regulations to assist Federal agencies in their execution of Executive Order 12699.

C. Purposes

The purposes of Executive Order 12699, as applied to new Federal buildings, are to reduce risks to the lives of occupants of buildings owned by the Federal government and to persons who would be affected by the failures of Federal buildings in earthquakes; to improve the capability of essential Federal buildings to function during or after an earthquake; and to reduce earthquake losses of public buildings, all in a cost-effective manner.

The language of Executive Order 12699 distinguishes between the seismic safety purposes of the requirements as they are applied to Federally leased, assisted, or regulated buildings. The purposes as they affect these types of buildings are to reduce risks to the lives of persons affected by earthquake failures and to protect public investments, all in a cost-effective manner.

It is significant that the purposes of Executive Order 12699 go beyond the protection of the lives of building occupants to improving the capability of buildings to function during and after an earthquake and to reducing earthquake losses. The extension of seismic safety concerns beyond those traditionally associated with life safety presents new and formidable

challenges to earthquake engineers and program planners, particularly when these new seismic safety objectives must be achieved in a cost-effective manner.

D. Scope

Executive Order 12699 applies to all Federal agencies responsible for the following activities.

- Design and construction of new Federally-owned buildings
- Construction and lease of new buildings for Federal use
- Assistance in the financing through grants or loans of newly constructed buildings
- Guaranteeing the financing through loan or mortgage insurance programs of newly constructed buildings
- Regulating the structural safety of buildings

The Federal agencies responsible for construction projects of the first two types listed above must demonstrate compliance for all projects for which development of detailed plans and specifications is initiated subsequent to the date of the Order. Federal agencies administering the other types of programs listed above have until February 1, 1993, to establish an appropriate seismic hazard reduction program by adoption and enforcement of appropriate regulations, policies, or procedures.

E. Execution

By consensus, the ICSSC prepared and endorsed guidelines and procedures for implementing Executive Order 12699, *Guidelines and Procedures for Implementation of the Executive Order on Seismic Safety of New Building Construction*, ICSSC RP 2.1-A. The *Guidelines* recommend that each agency name a Seismic Safety Coordinator to serve as a focal point for the agency's seismic safety program. The *Guidelines* also provide recommendations for determining the adequacy of local building codes. Recommended implementation procedures include requiring written acknowledgement of meeting agency seismic design and construction requirements from the building architect, contractor, and/or owner.

Individual agency responsibility for the execution of Executive Order 12699 extends to a number of specific requirements. First, each agency must determine whether it is affected by the Order. Second, in many Federal agencies, some programs will be affected by the Order and others will not. The ICSSC *Guidelines* recommend that all programs be

considered affected until it has been suitably demonstrated that they are exempt. Moreover, agencies that are involved only intermittently with building construction should not be considered exempt. The *Guidelines* also recommend that no program affected by the Executive Order be allowed to self-exempt, and that exemption criteria for reasons such as non-applicability or low regional seismicity be uniform across each agency. Finally, agencies and programs that identify themselves as exempt should have the exemption verified by legal counsel. Even if no new building construction projects are underway at the time of assessment, a seismic safety program should be in place by the end of the 3-year lead-in period.

Policy and seismic safety plan development for program implementation of the Executive Order, another important requirement for individual agency execution, should be at the agency level. According to the *Guidelines*, each agency should determine the level at which evaluations and decisions are to be made and issue appropriate implementing rules and procedures. The *Guidelines* also state that agencies with unique missions requiring exceptional seismic safety considerations should establish and promulgate appropriate implementation and enforcement policies and procedures. Absent unique mission requirements, program implementation should be cost-effective and enforcement efforts reasonable.

With regard to program implementation, agencies with technically trained staffs are encouraged to include building plan reviews in their seismic safety programs. For agencies without technical staffs, reasonable implementation and enforcement would include notifying appropriate responsible parties, such as the building owner, architect, engineer, or contractor, of the required minimum standards, and requiring a written acknowledgement of awareness of the requirements and of the intent to comply. In addition, the ICSSC *Guidelines* advise that no contract or grant should be entered into without receipt of written acknowledgement. For Federally owned or leased buildings, a form of certification or statement of compliance may be required before acceptance of the building. Such statements of compliance may include the engineer's and architect's signed and stamped verification of seismic design codes, standards and practices used in the design and construction of the building, construction observation reports, local or state building department plan review documents, or other documents deemed appropriate by the agency.

F. Activities of the Federal Emergency Management Agency under the National Earthquake Hazards Reduction Program

FEMA, as the lead agency in the NEHRP, has taken an active role in helping to launch Executive Order action by the principal NEHRP agencies and by the other affected Federal agencies. The Director of FEMA wrote directly to the heads of those agencies to enlist their assistance in ensuring that the implementation actions were initiated and coordinated by their programs. Further, the Director sent the agencies copies of the ICSSC *Guidelines* for

implementation and the ICSSC recommended design and construction practice standards appropriate for agency adoption.

FEMA supported the ICSSC in its writing of the *Guidelines*, the recommended standards, and the model preamble distributed to assist agencies in the development of rules and regulations required by the Executive Order.

Two interagency workshops were sponsored by FEMA to familiarize Federal agencies with the Executive Order and to assist them in the formulation of the required regulations and procedures for implementation.

Action by state and local governments, multistate organizations, and professional groups is critical to the successful implementation of the Order throughout the nation. To assist in this area, FEMA conducted workshops, briefing sessions, and cooperative activities with a number of these organizations. An individualized home study program on the Order is being developed that will provide state and local officials with the information needed to implement the Order.

II. Federal Agencies Affected by Executive Order 12699

The extent of Federal Government involvement in new construction is indicated by recent data from the General Accounting Office (GAO). According to the GAO report, *Federal Buildings: Many Are Threatened by Earthquakes, but Limited Action Has Been Taken*, GAO/GGD-92-62, May 1992, the Federal Government owned approximately 417,000 buildings in 1989, and had 68,000 different lease locations, representing 3 billion square feet of space. Approximately 40 percent of Federal buildings, lease locations, and employees are located in seismically active areas, where the risk of earthquake damage varies from moderate to very high. The report concludes that although many Federal buildings and employees are at risk from earthquakes, the efforts of Federal agencies to reduce building vulnerability have been limited.

Of the 29 Federal agencies that own buildings or lease space, 6 manage over 85 percent of Federal space: the Departments of the Army, Navy, Air Force, and Veterans Affairs (VA); the GSA; and the United States Postal Service (USPS). Of these six agencies, only the VA is legislatively mandated (by the *Veterans Health Care Expansion Act of 1973*) to reduce the vulnerability of its buildings to earthquake damage.

Two of the agencies reporting to FEMA on their progress in the execution of Executive Order 12699 during FY 1991 and 1992 are implementing the Order on a voluntary basis. The USPS and the Architect of the Capitol, as independent organizations, are not required to comply with the Order. However, both have offered to voluntarily execute the requirements

of Executive Order 12699 in the interest of ensuring the life safety of their building occupants and the seismic safety of their buildings.

The following Federal agencies own buildings, lease space, and/or regulate new building construction and are responsible for the execution of Executive Order 12699.

Department of Agriculture	Department of Justice
Architect of the Capitol	National Aeronautics and Space Administration
Central Intelligence Agency	National Archives
Department of Commerce	National Endowment for the Arts
Department of Defense	National Science Foundation
Air Force	Nuclear Regulatory Commission
Army	US Postal Service
Navy	Small Business Administration
Department of Education	Smithsonian
Department of Energy	Department of State
Environmental Protection Agency	Tennessee Valley Authority
Federal Deposit Insurance Corporation	Department of Transportation
Federal Emergency Management Agency	Veterans Affairs
General Services Administration	
Department of Health and Human Services	
Department of Housing and Urban Development	
Department of Interior	

III. Assessment of Federal Agency Execution

A. Assessment Criteria

Each agency affected by Executive Order 12699 is required to provide FEMA with information on the status of its procedures, progress in its implementation plan, and the impact of the Order on its operations. A format for reporting progress during FY 1991 and 1992 was provided to the Federal agencies by FEMA.

The following criteria used by FEMA to assess Federal agency execution of Executive Order 12699 reflect the full range of activities which could be used by the agencies to meet the intent of Executive Order 12699.

- Leadership
- Adoption of Standards
- Program Implementation
- Formulation of Regulations or Procedures
- Coordination
- Agency Impact

The assessment criteria are based primarily on the requirements of Executive Order 12699 and the ICSSC *Guidelines*. In addition, the criteria developed for assessing Executive Order 12699 build on the criteria used to assess the National Dam Safety Program and the criteria developed for evaluating compliance with Executive Order 11988, *Floodplain Management*.

B. Progress in the Execution of Executive Order 12699

The Federal agency submissions on the execution of Executive Order 12699 indicate that the agencies have made considerable progress in the effort to improve the seismic safety of all new Federal buildings and buildings that are leased, assisted, or regulated by the Federal Government. Most of the affected Federal agencies have issued procedures or regulations to implement Executive Order 12699 and have adopted one or more of the recommended minimum standards for seismic safety; the Federal agencies primarily involved in the direct construction of new buildings, such as the Army, Navy, Air Force, the Department of State (DOS), GSA, the Nuclear Regulatory Commission (NRC), and VA, reported that they were already in substantial compliance with the Executive Order at the time of its issuance.

While real progress has been made, there is much that still needs to be accomplished before both the intent and the requirements of Executive Order 12699 are met by all affected Federal agencies, particularly by those agencies primarily involved in grants and loans for new building construction. The principal concern is the slow progress on the part of many of the agencies providing Federal domestic assistance for new building construction toward establishing the final regulations or procedures required for compliance before February 1, 1993. In addition, coordination procedures and activities for implementing Executive Order 12699 must be improved.

The following comments refer to the accomplishments and deficiencies in the Order's execution by Federal agencies. Recommendations have been formulated to address those areas requiring improvement.

Leadership

Agency-wide leadership in the execution of Executive Order 12699 is of paramount importance in meeting both the intent and the requirements of the Order. Providing a strong and well-coordinated program at the agency level for implementing Executive Order 12699 is

particularly important in light of one of the primary goals of the Order--for the Federal Government to exercise a leadership role in seismic safety, thereby encouraging states and communities throughout the nation to adopt and enforce seismic safety codes.

To evaluate the agency submissions for leadership efforts, FEMA looked at each agency's activities in the areas of agency-wide policy directives and regulations; appointment of policy level officials; establishment of plans and schedules for program implementation; procedures for ensuring compliance with the Order; and special activities and initiatives. One agency, the Department of Energy (DOE), is outstanding in this area and can serve as a model to other Federal agencies on how to implement an agency-wide leadership role in seismic safety. For example, DOE has made changes to the final DOE Financial Assistance Rules to comply with the Order; developed new Orders to formalize its seismic safety programs and responsibilities; assigned clearly delineated levels of responsibility, beginning at the Assistant Secretary level, for executing the Order; increased agency seismic engineering capability; and conducted a cohesive, comprehensive training and education program for in-house staff and staff from other agencies. From the information provided by the agencies, it appears that GSA, the Department of Interior (DOI), and the Tennessee Valley Authority (TVA) also are well on their way toward establishing strong, agency-wide programs in seismic safety.

In the area of leadership, FEMA also considered the relevance of seismic safety to the agency. For example, some agencies, such as GSA and DOE, have a critical interest in seismic safety because of the nature of their missions and can obtain top level attention in this area. For other agencies, however, funding and resources for seismic safety issues are not and will not be a priority and strong leadership cannot be expected. Nonetheless, the structure and components of DOE's seismic safety program can serve as a model for other Federal agencies interested in strengthening leadership, regardless of the priority and scope of their seismic safety programs.

The following recommendations can assist Federal agencies in developing a strong and well-coordinated program at the agency level.

- Federal agencies should ensure greater consistency in the application of Executive Order 12699 through the development of agency-wide policy directives, regulations, and procedures.
- The designation of a responsible policy level official, together with an agency Seismic Safety Coordinator, will assist in providing overall leadership in the implementation of the Order.

- Federal agencies should establish plans and schedules for fully implementing the seismic safety program before February 1, 1993, and should establish regulations or procedures for ensuring compliance with Order requirements by regional offices, field offices, and bureaus.

Adoption of Standards

In assessing compliance in this area, FEMA first reviewed the agency reports for their adoption of the recommended ICSSC design and construction standards and practices transmitted to the agencies by FEMA. As the minimum standard for all Federal agencies, the ICSSC recommended the use of the most recent edition of those standards and practices that are substantially equivalent to or exceed the seismic safety levels in the most recent or immediately preceding edition of the *NEHRP Recommended Provisions*. Further, the ICSSC determined that the model codes provided adequately for seismic safety and were appropriate for Federal agency use in implementing the Order. Other areas evaluated by FEMA with respect to the adoption of standards included assessment of risk; use of local building codes; establishment of standards for unique programs and requirements; and procedures for the review of the adequacy of local building codes.

From the information provided for this first reporting period, the strongest effort by most agencies has been in the adoption of seismic safety standards, a key requirement of Executive Order 12699. Of the 29 Federal agencies reporting on the execution of the Order, 16 agencies state that they have adopted one or more of the ICSSC recommended model codes that are substantially equivalent to the *NEHRP Recommended Provisions*; a number of agencies involved in the direct construction of new buildings report that they were already using one or more of the standards on issuance of the Executive Order. Six agencies state that they will adopt one or more of the standards in the near future. This widespread compliance with the Order's requirement for use of these nationally recognized private sector standards and practices is an extremely important step on the part of the Federal agencies toward meeting the intent and long-term goals of Executive Order 12699.

Most agencies, however, did not address their use of local building codes or their procedures for evaluating local building codes to determine whether they can provide adequately for seismic safety. Executive Order 12699 provides that local building codes may be used by Federal agencies if the codes have been determined by the agency or the ICSSC to provide adequately for seismic safety. The ICSSC *Guidelines* also provide that each agency accepting local building codes as part of its seismic safety program should institute a procedure for their evaluation, and that the evaluation criteria should be established at the department level to ensure uniformity within a program and among related or similar agency programs.

The Federal agencies that are using local building codes, particularly those that are providing financial assistance, **must** assess the seismic safety adequacy of these codes. If this is not

being assessed, the agencies have not fully met their responsibilities under the Executive Order.

The following recommendations are made to improve compliance with the requirements relating to the establishment of standards.

- All Federal agencies should adopt and consistently use one or more of the ICSSC recommended model codes found appropriate for implementation of the Order by the ICSSC.
- Federal agencies that use local building codes, particularly those agencies providing financial domestic assistance, should establish procedures and criteria for evaluating the local building codes for substantial equivalency to the seismic safety level contained in the most recent or immediately preceding edition of the *NEHRP Recommended Provisions*.
- Evaluation procedures and criteria for evaluation and use of local building codes should be established at the agency level to ensure uniformity within a program and among related or similar programs.
- Guidance should be developed to establish evaluation procedures and criteria for local building codes that are consistent across all Federal agency programs.
- Federal agencies should incorporate the requirements of Executive Order 12699 governing new building construction into their grants application and contracts requirements documents.

Program Implementation

This very broad area of assessment was based on Federal agency reporting of establishment of policies, procedures, and criteria for identifying existing and future programs, documenting and assessing compliance, ensuring uniform application of the Executive Order, and reviewing regulations and procedures every 3 years; impediments to implementation; budget initiatives; exemption criteria; unique mission requirements; notification to responsible parties of the required minimum standards and certification or statement of compliance as proof of compliance with the required minimum standards; procedures for building plan reviews; and reporting across agencies and within agencies.

The reporting by the Federal agencies on progress in the area of program implementation varied greatly in the level of detail provided. Although few agencies have a formal seismic safety implementation plan in place to provide for assessment of progress and the impact of the Order on agency operations, most agencies reported the establishment of implementation

policies and procedures. Approximately one-half of the agencies reported that they have established written procedures for program implementation, including the construction agencies which already had technical staffs in place for the design and monitoring of projects at the time of the issuance of the Order. However, few agencies have formalized procedures and criteria for identifying existing and future programs or for assessing compliance with Executive Order 12699.

A significant number of agencies do not appear to be making an adequate effort to meet their responsibilities under the Executive Order with respect to Federal assistance programs.

No Federal agency affected by Executive Order 12699 reported any impediments to the implementation of the Order or significant increases or adjustments to its budget that would assist in its execution. While the Federal agencies may not be experiencing major impediments to implementation at present, impediments may arise as a result of limitations in agency budgets. If the Federal agencies can devise ways to handle anticipated impediments, their ability to implement Executive Order 12699 will certainly be facilitated.

Only a few Federal agencies, such as Department of Housing and Urban Development (HUD), GSA, the Environmental Protection Agency (EPA), FEMA, DOI, TVA, and the National Endowment for the Arts, provided information on the procedures and documentation required for monitoring compliance with building code standards. The *ICSSC Guidelines* provide detailed information on the procedures for complying with this important requirement of the Executive Order. The Federal agencies also did not address the requirement of the Executive Order on the need to review regulations and procedures at least every 3 years to incorporate new standards and practices.

The following recommendations may assist the Federal agencies in addressing these issues. Each Federal agency should:

- develop a Seismic Safety Plan that includes ways of assessing program progress and the impact of the Order on agency operations.
- assess its responsibilities under Federal domestic assistance programs, particularly as compliance relates to the issuance or amendment of existing regulations or procedures.
- incorporate the costs for the execution of Executive Order 12699 into its usual budget process.

- address future organizational, staffing, and budgetary implications of compliance with Executive Order 12699. As necessary, specific mechanisms should be devised to facilitate execution of the Order.
- incorporate the seismic safety requirements of Executive Order 12699 into its contract and grant application forms.
- establish review procedures to ensure that, when needed, new standards and practices are incorporated into agency regulations and procedures. The review should be conducted at least once every 3 years.
- ensure that its Seismic Safety Coordinator is technically trained, *i.e.*, has structural engineering experience and a seismic background.
- provide other agencies with information copies of regulations, policies, standards, and procedures. This information sharing can be accomplished through the ICSSC.

Formulation of Regulations or Procedures

An important requirement of Executive Order 12699 governs the development of regulations or procedures. Under Section 4(b) of the Order, each agency must issue or amend existing regulations or procedures to comply with the Order by January 5, 1993. Section 8(a) of Public Law 101-614 also requires the issuance by all Federal agencies of final regulations required by Section 4(b) of the Order before February 1, 1993.

From the agency submissions, it is evident that certain issues may control whether an agency elects to formulate regulations or procedures to implement the requirements of Executive Order 12699, *i.e.*, the mission of the agency and whether the agency's construction program is implemented by regulation or controlled by internal design policy. Some Federal agencies indicate that they are not planning to develop formal regulations because they are not staffed for regulation promulgation and because they are trying to control design costs with professional staffs trained in the use of current codes and standards. Only DOE, TVA, the Department of Commerce (DOC), HUD, FEMA, the Department of Transportation (DOT), and the Central Intelligence Agency (CIA) have stated that they are in the process of enacting regulations.

Since the development of regulations may not always be the best approach to implementing the Order, each agency should conduct, at a minimum, a formal assessment to determine whether procedures or regulations are the best method for executing Executive Order 12699. For the most part, the submissions from the agencies did not address this issue.

The following recommendations can assist the Federal agencies in complying with the requirement governing the establishment of regulations or procedures to implement the Executive Order.

- All affected Federal agencies should consider whether the policies and procedures implemented can satisfy the intent of Executive Order 12699, *i.e.*, each agency should assess whether regulations are necessary. Another approach to the same issue is to assess the effectiveness of the procedural approach; if procedures do not appear to be working, the agency must consider the development of regulations to execute Executive Order 12699.
- Some forum should be established whereby Federal agencies writing regulations or procedures can meet to develop consistent solutions to common problems, and to prevent contradictory approaches.
- Procedures and policy statements that have a significant impact on the public should go through the rulemaking (public review and comment) process.

Coordination

Certain aspects of coordination have received a great amount of emphasis on the part of the Federal agencies. For example, the majority of the agencies reporting (23) have appointed a Seismic Safety Coordinator and most of the agencies are participating on the ICSSC. While these two activities are commendable, they are insufficient to fully implement Executive Order 12699. The appointment of a Seismic Safety Coordinator and participation on the ICSSC are important steps toward the establishment of a framework for coordinating the implementation of Executive Order 12699. However, a number of agencies did not provide information on the mechanisms that the Seismic Safety Coordinator, or other individuals and groups, are using to coordinate implementation of the requirements of the Order. Of all the Federal agencies reporting, DOE provided the most information on its coordination activities, including those branches responsible for oversight and coordination and the procedures by which the agency plans to ensure compliance with the Order.

The following recommendations address issues in the area of coordination.

- Consideration should be given to the designation of an agency or group, such as the ICSSC, that would take a lead role in coordination of Executive Order execution.
- At a minimum, the ICSSC should increase its efforts in coordination of Executive Order activities by the Federal agencies.

- All Federal agencies should work more closely with the ICSSC as they develop additional policies, guidelines, and procedures to comply with Executive Order 12699.

Agency Impact

Another assessment criterion for the Federal agencies was the impact of Executive Order 12699 on agency budgets and on internal agency operations. The majority of the Federal agencies reported limited or no impact on their agency budgets. Some Federal agencies, such as DOS, reported that there would be no budget impact because existing requirements surpass seismic design costs. Other agencies, such as TVA, reported that funds for the program are currently derived from existing organizational overhead budgets or from reprogramming. DOE reported that while it anticipates no increases in its budget for owned buildings, the impact of compliance could be major for its financial assistance programs. Finally, some agencies, such as the CIA, FEMA, and the Department of Justice (DOJ), discussed possible increases in construction costs because of the need to comply with the seismic safety standards.

Most agencies reported that compliance with Executive Order 12699 would result in minimal or no impact on agency operations, and that no additions to staff or significant additional funding will be required.

Similar to the discussion on possible impediments to the implementation of the Order under *Program Implementation*, there was limited response on agency impact. While the Federal agencies currently may not be experiencing any impact on their organization, staffing, and budgets as a result of compliance with the Order, it is likely that, for many, there will be an impact in the future. Once again, if the Federal agencies can devise ways to anticipate the impact of compliance on staffing, organization, and budgets, their ability to implement Executive Order 12699 will be facilitated.

The following recommendations may assist the Federal agencies in addressing these issues.

- All Federal agencies should monitor and assess the impact of compliance with Executive Order 12699 on organization, staffing, and budgets.
- Current organizational, staffing, and budgetary planning should take future seismic safety requirements into account.

Executive Order 12699

Presidential Documents

Title 3—

Executive Order 12699 of January 5, 1990

The President

Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction

By the authority vested in me as President by the Constitution and laws of the United States of America, and in furtherance of the Earthquake Hazards Reduction Act of 1977, as amended (42 U.S.C. 7701 *et seq.*), which requires that Federal preparedness and mitigation activities are to include "development and promulgation of specifications, building standards, design criteria, and construction practices to achieve appropriate earthquake resistance for new . . . structures," and "an examination of alternative provisions and requirements for reducing earthquake hazards through Federal and federally financed construction, loans, loan guarantees, and licenses. . . ." (42 U.S.C. 7704(f)(3, 4)), it is hereby ordered as follows:

Section 1. Requirements for Earthquake Safety of New Federal Buildings.

The purposes of these requirements are to reduce risks to the lives of occupants of buildings owned by the Federal Government and to persons who would be affected by the failures of Federal buildings in earthquakes, to improve the capability of essential Federal buildings to function during or after an earthquake, and to reduce earthquake losses of public buildings, all in a cost-effective manner. A building means any structure, fully or partially enclosed, used or intended for sheltering persons or property.

Each Federal agency responsible for the design and construction of each new Federal building shall ensure that the building is designed and constructed in accord with appropriate seismic design and construction standards. This requirement pertains to all building projects for which development of detailed plans and specifications is initiated subsequent to the issuance of the order. Seismic design and construction standards shall be adopted for agency use in accord with sections 3(a) and 4(a) of this order.

Sec. 2. Federally Leased, Assisted, or Regulated Buildings.

The purposes of these requirements are to reduce risks to the lives of occupants of buildings leased for Federal uses or purchased or constructed with Federal assistance, to reduce risks to the lives of persons who would be affected by earthquake failures of federally assisted or regulated buildings, and to protect public investments, all in a cost-effective manner. The provisions of this order shall apply to all the new construction activities specified in the subsections below.

(a) Space Leased for Federal Occupancy. Each Federal agency responsible for the construction and lease of a new building for Federal use shall ensure that the building is designed and constructed in accord with appropriate seismic design and construction standards. This requirement pertains to all leased building projects for which the agreement covering development of detailed plans and specifications is effected subsequent to the issuance of this order. Local building codes shall be used in design and construction by those concerned with such activities in accord with section 3(a) and 3(c) of this order and augmented when necessary to achieve appropriate seismic design and construction standards.

(b) Federal Domestic Assistance Programs. Each Federal agency assisting in the financing, through Federal grants or loans, or guaranteeing the financing, through loan or mortgage insurance programs, of newly constructed buildings

shall plan, and shall initiate no later than 3 years subsequent to the issuance of this order, measures consistent with section 3(a) of this order, to assure appropriate consideration of seismic safety.

(c) **Federally Regulated Buildings.** Each Federal agency with generic responsibility for regulating the structural safety of buildings shall plan to require use of appropriate seismic design and construction standards for new buildings within the agency's purview. Implementation of the plan shall be initiated no later than 3 years subsequent to the issuance of this order.

Sec. 3. Concurrent Requirements. (a) In accord with Office of Management and Budget Circular A-119 of January 17, 1980, entitled "Federal Participation in the Development and Use of Voluntary Standards," nationally recognized private sector standards and practices shall be used for the purposes identified in sections 1 and 2 above unless the responsible agency finds that none is available that meets its requirements. The actions ordered herein shall consider the seismic hazards in various areas of the country to be as shown in the most recent edition of the American National Standards Institute Standards A58, *Minimum Design Loads for Buildings and Other Structures*, or subsequent maps adopted for Federal use in accord with this order. Local building codes determined by the responsible agency or by the Interagency Committee for Seismic Safety in Construction to provide adequately for seismic safety, or special seismic standards and practices required by unique agency mission needs, may be used.

(b) All orders, regulations, circulars, or other directives issued, and all other actions taken prior to the date of this order that meet the requirements of this order, are hereby confirmed and ratified and shall be deemed to have been issued under this order.

(c) Federal agencies that are as of this date requiring seismic safety levels that are higher than those imposed by this order in their assigned new building construction programs shall continue to maintain in force such levels.

(d) Nothing in this order shall apply to assistance provided for emergency work essential to save lives and protect property and public health and safety, performed pursuant to Sections 402, 403, 502, and 503 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) (42 U.S.C. 5170a, 5170b, 5192, and 5193), or for temporary housing assistance programs and individual and family grants performed pursuant to Sections 408 and 411 of the Stafford Act (42 U.S.C. 5174 and 5178). However, this order shall apply to other provisions of the Stafford Act after a presidentially declared major disaster or emergency when assistance actions involve new construction or total replacement of a building. Grantees and subgrantees shall be encouraged to adopt the standards established in section 3(a) of this order for use when the construction does not involve Federal funding as well as when Federal Emergency Management Agency (FEMA) funding applies.

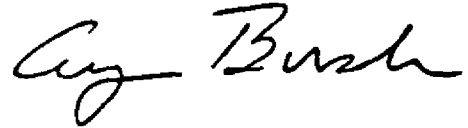
Sec. 4. Agency Responsibilities. (a) The Director of the Federal Emergency Management Agency shall be responsible for reporting to the President on the execution of this order and providing support for the secretariat of the Interagency Committee on Seismic Safety in Construction (ICSSC). The ICSSC, using consensus procedures, shall be responsible to FEMA for the recommendation for adoption of cost-effective seismic design and construction standards and practices required by sections 1 and 2 of this order. Participation in ICSSC shall be open to all agencies with programs affected by this order.

(b) To the extent permitted by law, each agency shall issue or amend existing regulations or procedures to comply with this order within 3 years of its issuance and plan for their implementation through the usual budget process. Thereafter, each agency shall review, within a period not to exceed 3 years, its regulations or procedures to assess the need to incorporate new or revised standards and practices.

Sec. 5. Reporting. The Federal Emergency Management Agency shall request, from each agency affected by this order, information on the status of its procedures, progress in its implementation plan, and the impact of this order on its operations. The FEMA shall include an assessment of the execution of this order in its annual report to the Congress on the National Earthquake Hazards Reduction Program.

Sec. 6. Judicial Review. Nothing in this order is intended to create any right or benefit, substantive or procedural, enforceable at law by a party against the United States, its agencies, its officers, or any person.

THE WHITE HOUSE,
January 5, 1990.



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