

STRATEGIES FOR THE IMPLEMENTATION OF EARTHQUAKE PREPAREDNESS IN THE ARKANSAS SCHOOLS

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ABSTRACT

In an effort to coordinate the activities of the Office of Emergency Services and the Department of Education in earthquake preparedness for schools within the twenty-four counties on or in close proximity to the New Madrid Fault, the following responsibilities and duties will be discussed: the science section, Instructional Services, may function as the contact for communications. To effectively utilize the extensive earthquake educational materials available from the Office of Emergency Services, the Division of Instructional Services may facilitate the dissemination of materials and monitor their use during annual visits. Other divisions and agencies may assist in the implementation of this program.

JOHN GILL

Dr. John Gill, educated at San Antonio College, University of Southern Mississippi, University of Minnesota, and the University of Arkansas, has had various academic appointments. He has been a Professor and Department Chair of Aerospace Studies at the University of Minnesota, a lecturer at a NATO school in West Germany, a department head and administrator at a highschool, and, from 1980 to the present he has been Educational Administration Supervisor, Division of Instructional Services, Arkansas Department of Education.

INTRODUCTION

In order to provide the most effective earthquake mitigation, preparation and response, and to enhance recovery capabilities, the 77th General Assembly, Regular Session, 1989, State of Arkansas, passed Act 247. This Act was to establish a State Earthquake Preparedness Program within the Arkansas Office of Emergency Services. The Department of Education was contacted in April, 1989, to establish a liaison person in the department. This person was to attend and participate in the National Center for Earthquake Engineering Research Seminar, entitled "Disaster Preparedness - The Place of Earthquake Education in Our Schools," during July of 1989. Two preliminary planning and coordination meetings were held between Dan Cicirello, Supervisor, Earthquake Preparedness (OES), and John Gill, Supervisor, Educational Administration, Department of Education (ADE). Further discussions will address the earthquake preparedness training status and plans for the future in Arkansas schools.

EARTHQUAKE PREPAREDNESS TRAINING STATUS AND PLANS FOR THE FUTURE

There are three unique training programs for the public schools in Arkansas that include the following: A Ready-Teddy program for K-4; a VCR presentation about earthquakes in the central area of the United States, approximately 45 minutes in length for the 5th and 6th grades; and a 45 minute presentation designed for the older students in the 7-12 grade groups. A description of the Ready-Teddy program is contained in the Appendices.

Approximately 63 schools have received training during the past two years. Training may be scheduled on a first come - first served basis by contacting the Arkansas Office of Emergency Services. Two people are currently conducting all of the in-school seminars, which presents somewhat of a limiting factor in the time required to accomplish training in the remaining schools (227). Some of the schools have received the training or training materials in the years prior to 1987. Director's Memo No. 89-18, May 26, 1989 (Appendices), has increased the interest from the schools in the 24-county area, and the materials requested may soon deplete the funds allocated for earthquake training materials from the Office of Emergency Services.

Plans for the Future

Time, materials, and the number of schools involved indicate that both short and long range plans must be promulgated.

Short Range Plans

The short range plans will include:

1. Close cooperative efforts continuing between OES, ADE, and the Governor's Earthquake Advisory Committee.

2. The science supervisor, ADE, serving as the contact person for OES.
3. Requesting assistance from the Educational Cooperatives in disseminating materials and assisting with earthquake preparedness training when possible.
4. Requesting that the 8th grade earth science teachers emphasize the sections on earthquakes and prepare student peer instructors as class projects in science.
5. Providing earthquake preparedness information to K-12 supervisors serving the twenty-four counties concerned.

Long Range Plans

The long range plans will include:

1. Monitoring the earthquake preparedness programs at the appropriate schools by K-12 supervisors, ADE, during their visits.
2. Assisting in obtaining data from schools in the endangered areas concerning training completed and training required (ADE).
3. Assisting OES to ensure that earthquake preparedness training is available to universities and colleges within the endangered counties (ADE).

CONCLUSIONS

Training materials and trainers well versed in earthquake preparedness seminars are available through the offices of the Arkansas Office of Emergency Services. The number of schools (277), some of which had previous training prior to 1987, and some of which have received earthquake preparedness materials, will require a survey instrument to determine their individual level of preparedness. This survey report will be formulated by the Department of Education and the Offices of Emergency Services and will be disseminated by the Department of Education. The number of schools (277) also dictates that some training take place at the educational cooperatives to responsible school personnel in large numbers, if schedules and time permit.

The educational cooperatives may also disseminate earthquake preparedness materials after proper coordination and approval from the Cooperative directors. Earth science and general science teachers will be encouraged to augment their textbooks with earthquake preparedness materials from the Office of Emergency Services. These teachers will also be asked to encourage students to be peer instructors for the lower grades in earthquake preparedness as science projects.

The Arkansas Department of Education will continue to work closely with the Office of Emergency Services and the Governor's Earthquake Advisory Committee to ensure that the schools in

the twenty-four county endangered areas receive earthquake preparedness training in order that the most effective earthquake mitigation, preparation, response, and recovery capabilities may be accomplished.

ACKNOWLEDGEMENTS

The assistance and cooperation of Mr. Dan Cicerello, Supervisor, Office of Emergency Services, State of Arkansas, is gratefully acknowledged. The NCEER's major part in formulating, coordinating, and financing this inaugural conference on earthquake education is also gratefully acknowledged.

REFERENCES

ACT 247, State of Arkansas, 77th General Assembly Regular Session, 1989, entitled "An Act to Establish a State Earthquake Preparedness Program Within the Arkansas Office of Emergency Services; and for Other Purposes," is included as an appendix.

Director's Memo No. 89-18, May 26, 1989, Department of Education, State of Arkansas, entitled, "The Arkansas Earthquake Preparedness Act of 1989," is also included in the Appendix.



Arkansas

DEPARTMENT OF EDUCATION

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RUTH S. STEELE, Director, General Education Division

Director's Memo No. 89-18

May 26, 1989

REGULATORY

TO: Superintendents, ESC Directors, and Persons Interested
in Earthquake Preparedness Programs

FROM: Ruth S. Steele, Director, General Education Division
Emma Bass, Associate Director, Instructional Services

SUBJECT: "The Arkansas Earthquake Preparedness Act of 1989"

Act 247 of 1989, effective February 24, 1989, charges the Office of Emergency Services, Earthquake Preparedness Program, with the responsibility of carrying out such programs and requires the full cooperation of state agencies, offices and personnel to the end that the most effective earthquake mitigation, preparation, response and recovery capabilities may be accomplished.

Twenty-four counties in Arkansas (from Randolph in the northeast to Chicot in the southeast, and affecting approximately 650,000 citizens) are on or in close proximity to the New Madrid Fault. Therefore, the purpose of this memo is to notify all school districts, cooperatives, and interested parties that earthquake preparedness programs are essential and should be initiated, for those who have not done so, as soon as possible. To assist with these programs the following information is provided:

1. School Earthquake Safety Program Guidebooks are available upon request.
2. Lectures and video presentations are also available for students K-12.
3. On-site inspections and recommendations for schools and districts may be scheduled.
4. All of these services are provided by the State Office of Emergency Services, P.O. Box 758, Conway, AR 72032-0758, contact person, Dan Cicirello, Supervisor, 501-374-1201.

The K-12 area supervisors will monitor these programs during their annual visits.

A Bill

1 State of Arkansas
2 77th General Assembly
3 Regular Session, 1989
4 By: Representative O. Miller

HOUSE BILL 1154

For An Act To Be Entitled

8 "AN ACT TO ESTABLISH A STATE EARTHQUAKE PREPAREDNESS PROGRAM
9 WITHIN THE ARKANSAS OFFICE OF EMERGENCY SERVICES; AND FOR
10 OTHER PURPOSES."

12 BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

14 SECTION 1. Short Title. This act may be cited as the "Arkansas
15 Earthquake Preparedness Act of 1989."

17 SECTION 2. PURPOSE. It is hereby found and determined by the General
18 Assembly that: there exists a history of violent seismic activity within the
19 Central United States Seismic Zone which includes the New Madrid Fault; the
20 southern branch of the New Madrid Fault being at or about Marked Tree,
21 Arkansas, and extends northeast into Missouri and Tennessee; that a recurrence
22 of the 1811-1812 earthquake swarm, whereby 55 of the approximate 2,010
23 earthquakes occurring during a three month period that had surface wave
24 magnitudes of 6.0 - 8.7 (Richter) estimated to have affected in excess of
25 800,000 square miles, is again possible; that it is essential for the
26 protection of life and limb of the citizens of this State, and particularly
27 those approximately 650,000 citizens on and in close proximity of the fault,
28 that a program be initiated to provide for continuous mitigation,
29 preparedness, response and recovery capability for violent seismic activity.
30 The General Assembly further determines that it be appropriate to amend the
31 "Interstate Civil Defense and Disaster Compact," to be in concert with the
32 Central United States Earthquake Consortium efforts to develop an "Interstate
33 Earthquake Emergency Compact." Therefore, it is the purpose and intent of
34 this Act to initiate a program to deal with this matter and to charge the
35 Office of Emergency Services, Earthquake Preparedness Program, with the
36 responsibility of carrying out the program requiring the full cooperation of

1 all other state and local government agencies, departments, offices and
 2 personnel and requiring that all earthquake mitigation, preparedness, response
 3 and recovery related functions of Arkansas be coordinated to the maximum
 4 extent with comparable functions of the Federal government including its
 5 various departments and agencies with other states and localities, and with
 6 private agencies of every type, to the end that the most effective earthquake
 7 mitigation, preparation, response and recovery capabilities may be
 8 accomplished.

10 SECTION 3. ARTICLE II of Arkansas Code 12-76-102 is hereby amended to
 11 read as follows:

13 "ARTICLE II

15 It shall be the duty of each party state to formulate civil defense plans
 16 and programs for application within such state. There shall be frequent
 17 consultation between the representatives of the states and with the United
 18 States Government and the free exchange of information and plans, including
 19 inventories of any materials and equipment available for civil defense. In
 20 carrying out such civil defense plans and programs, the party states shall, so
 21 far as possible, provide and follow uniform standards, practices and rules and
 22 regulations including:

23 (a) insignia and any other distinctive articles to designate and
 24 distinguish the different civil defense services;

25 (b) mobilization of civil defense forces and other tests and exercises;

26 (c) warnings and signals for drills or attacks and the mechanical
 27 devices to be used in connection therewith;

28 (d) shutting off water mains, gas mains, electric power connections and
 29 the suspension of all other utility services;

30 (e) all materials or equipment used or to be used for civil defense
 31 purposes in order to assure that such materials and equipment will be easily
 32 and freely interchangeable when used in or by any other party state;

33 (f) the conduct of civilians and the movement and cessation of movement
 34 of pedestrians and vehicular traffic, prior, during and subsequent to drills
 35 or attacks or disasters;

36 (g) the safety of public meetings or gatherings;

- 1 (h) standardized data bank of response and recovery resources; and
 2 (i) disaster forecasts and reports."

3
 4 SECTION 4. ARTICLE VIII of Arkansas Code 12-76-102 is hereby amended to
 5 read as follows:

6
 7 "ARTICLE VIII

8
 9 Any party state rendering aid in another state pursuant to this compact
 10 shall be reimbursed by the party state receiving such aid for any loss or
 11 damage to, or expense incurred in the operation of any equipment answering a
 12 request for aid, and for the cost incurred in connection with such requests,
 13 including amounts paid under ARTICLE VII; provided, that any aiding party
 14 state may assume in whole or in part such loss, damage, expense, or other
 15 cost, or may loan such equipment or donate such services to the receiving
 16 party state without charge or cost; and provided further that any two or more
 17 party states may enter into supplementary agreements establishing a different
 18 allocation of costs as among those states. The United States Government may
 19 relieve the party state receiving aid from any liability and reimburse the
 20 party state supplying civil defense forces for compensation paid to and the
 21 transportation, subsistence, and maintenance expenses of such forces during
 22 the time of the rendition of such aid or assistance outside the state and may
 23 also pay fair and reasonable compensation for the use or utilization of the
 24 supplies, materials, equipment, or facilities so utilized or consumed. The
 25 State of Arkansas will only honor reimbursement claims from other states ren-
 26 dering aid to Arkansas to the same level of reimbursement and for the same
 27 items or areas of cost as each of those states' interstate compact laws pro-
 28 vide to requesting states."

29
 30 SECTION 5. ARTICLES XI and XII of Arkansas Code 12-76-102 are hereby
 31 amended to read as follows:
 32

33 "ARTICLE XI

34 The committee established pursuant to Article I of this compact may
 35 request the Federal Emergency Management Agency (or its successor) of the
 36

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Beth Hendrix

1 United States Government to act as an informational and coordinating body under
 2 this compact, and representatives of such agency of the United States
 3 Government may attend meetings of such committee.

5 ARTICLE XII

7 This compact shall become operative immediately upon its ratification by
 8 any state as between it and any other state or states so ratifying and shall
 9 be subject to approval by Congress unless prior congressional approval has
 10 been given. Duly authenticated copies of this compact and of supplementary
 11 agreements as may be entered into shall, at the time of their approval, be
 12 deposited with each of the party states and the Federal Emergency Management
 13 Agency (or its successor) and other appropriate agencies of the United States
 14 Government."

16 SECTION 6. Arkansas Code 12-76-102 is hereby amended to add the
 17 following at the end thereof:

19 "ARTICLE XVI

21 DEFINITIONS:

22 (1) "Civil Defense" shall be used here to be synonymous with emergency
 23 services, emergency management or future terms denoting an emergency or
 24 disaster response organization or capability with the chief goal of
 25 protecting life, limb and/or property of citizens that could be lost because
 26 of a disaster agent.

27 (2) "Civil Defense Forces" mean all state, county and local government
 28 agencies, departments, offices, and personnel, qualified emergency service
 29 workers as defined by Arkansas Code 12-75-103 and all private volunteer
 30 citizens called upon by state officials to provide emergency service in
 31 response to a disaster agent or to one that is pending.

32 (3) "State Employees" include all persons paid wages or salaries by
 33 the State of Arkansas, all qualified emergency service workers as defined by
 34 Arkansas Code 12-75-103 and all private volunteer Arkansas citizens called
 35 upon by state officials to provide emergency services."

1 SECTION 7. ARKANSAS EARTHQUAKE PROGRAM.
2

3 (a) The Office of Emergency Services, Earthquake Preparedness Program,
4 shall coordinate an earthquake program designed to protect the lives and
5 property of persons of this State, to the fullest possible extent, from the
6 direct effects of seismic activity affecting Arkansas as well as from
7 secondary effects created by such occurrence. The program shall coordinate
8 all activities involved in mitigation and preparedness regarding seismic
9 events. Toward that end, the earthquake program shall include but not be
10 limited to: continued assessment from proper scientific authorities of the
11 seismic risk to the state; training and education of state and local
12 government officials, employees and citizens of Arkansas regarding preparation
13 and protective measures that can be taken before, during and after an
14 earthquake; planning coordination, guidance and assistance to all state and
15 local government officials in preparation for, response to and recovery from
16 earthquakes; coordination of earthquake program activities with comparable
17 agencies of the Federal government and other states; the dissemination of
18 information to the public pertaining to earthquake hazards, protective
19 measures, seismic resistance in building construction, and appropriate actions
20 to be taken before, during and after an earthquake, and other matters the
21 Office of Emergency Services shall determine to be necessary or appropriate to
22 educate, inform and equip citizens in this State to deal with any earthquake.

23
24 (b) In order to carry out the responsibilities provided for herein,
25 the Office of Emergency Services, Earthquake Preparedness Program, is
26 authorized to employ such personnel as deemed necessary to the extent that
27 funds are appropriated therefor by the General Assembly.

28
29 SECTION 8. COMPLIANCE WITH THE "ARKANSAS EMERGENCY SERVICES ACT." It
30 is the intention of the General Assembly that this Act shall be in
31 compliance with Arkansas Code 12-75-101 et seq., "Arkansas Emergency Services
32 Act of 1973" to the extent that if this Act or any provision of it or
33 application thereof to any person or circumstance is held in opposition or
34 out of compliance with the "Arkansas Emergency Services Act of 1973" then
35 such provisions of this Act are invalid. But such invalidity of a provision
36 or provisions of this Act shall not affect other provisions or application

1 of this Act which can be given effect without the invalid provision,
2 provisions or its/their applications.

3

4 SECTION 9. All provisions of this Act of a general and permanent nature
5 are amendatory to the Arkansas Code of 1987 Annotated and the Arkansas Code
6 Revision Commission shall incorporate the same in the Code.

7

8 SECTION 10. EMERGENCY CLAUSE. It is hereby found and determined by the
9 General Assembly that this Act is designed to charge the Office of Emergency
10 Services with full responsibility of administering the Earthquake
11 Preparedness Program and should be given effect immediately. Therefore, an
12 emergency is hereby declared to exist and this Act being necessary for the
13 immediate preservation of the public peace, health and safety shall be in
14 full force and effect from and after its passage and approval.

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APPROVED BY

GOVERNOR

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