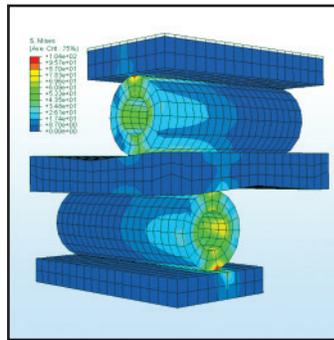


# Guidelines for MCEER Technical Reports

by  
Firstname Lastname, Firstname Lastname and  
Firstname Lastname



Technical Report MCEER-XX-XXXX

September 16, 2013

## NOTICE

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## Guidelines for MCEER Technical Reports

by

Author 1,<sup>1</sup> and Author 2<sup>2</sup>

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Technical Report MCEER-XX-XXXX

Sponsor and Award/Contract Number

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## Preface

MCEER is a national center of excellence dedicated to the discovery and development of new knowledge, tools and technologies that equip communities to become more disaster resilient in the face of earthquakes and other extreme events. MCEER accomplishes this through a system of multidisciplinary, multi-hazard research, education and outreach initiatives.

Headquartered at the University at Buffalo, State University of New York, MCEER was originally established by the National Science Foundation (NSF) in 1986, as the first National Center for Earthquake Engineering Research (NCEER). In 1998, it became known as the Multidisciplinary Center for Earthquake Engineering Research (MCEER), from which the current name, MCEER, evolved.

Comprising a consortium of researchers and industry partners from numerous disciplines and institutions throughout the United States, MCEER's mission has expanded from its original focus on earthquake engineering to one which addresses the technical and socio-economic impacts of a variety of hazards, both natural and man-made, on critical infrastructure, facilities, and society.

MCEER investigators derive support from the State of New York, National Science Foundation, Federal Highway Administration, National Institute of Standards and Technology, Department of Homeland Security/Federal Emergency Management Agency, other state governments, academic institutions, foreign governments and private industry.

*This paragraph is provided by the lead faculty author to briefly describe the major goals and outcomes of the research. It should be limited to between 100-150 words. The paragraph appears as the last one in the preface and is in italics.*



## **ABSTRACT**

This guidebook has been prepared to assist authors in formatting technical reports for publication by MCEER. It is presented in the required format and should be used as an example when preparing reports. Sections detailing the format for the abstract, acknowledgment, table of contents, list of illustrations, introduction, technical sections, figures, tables, equations, photographs and references are included.

The Guidelines and a companion Word template are available from the MCEER website.



## **ACKNOWLEDGMENTS**

The acknowledgments should include a thank you to the sponsors of the research as well as any collaborators on the project.



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## **SECTION 1 INTRODUCTION**

One of MCEER's major goals is to communicate the results of research being conducted to the scientific community and the public at large. One way to accomplish this goal is through the publication and distribution of technical reports.

A technical report is usually 100-300 pages long and presents new information. MCEER reports should contain only the essential elements of a project. As a general rule, reports should be limited to 200 pages, with a maximum page count of 350. Each report has an abstract, introduction, body of text, conclusion and references.

Potential technical reports are submitted to MCEER's Director, who will determine if the report is in an appropriate state of readiness to proceed with the publications process. Reports are considered ready for publication once the lead faculty author certifies that they have (1) read through the entire report and found it to be of sufficient quality for publication as a manuscript, (2) checked numbering throughout (sections, figures, tables and equations), (3) verified that the references are appropriate and correctly cited, and (4) obtained permission to use all copyrighted materials.

If the report is a Ph.D. thesis that has successfully passed a technical review by a committee or is authored by at least two faculty members, no further technical review is necessary. For all other reports, a copy is forwarded to at least one technical reviewer. The reviewer is asked to forward comments to MCEER within 60 days. Following the review, the report is returned to the author to address the comments.

Upon completion of the technical review cycle or approval of the Director if no review is necessary, the author will transmit a PDF of the report together with one printed copy to the MCEER Director. An editorial review will be conducted to check for spelling, grammar and format inconsistencies as well as to identify text that seems to be lacking or is not well explained. These areas will be marked in pen on the hard copy. The pages will be scanned and returned to the author to address as appropriate. The author is then responsible for making the changes as suggested by the editor. A cursory review will be conducted to ensure that the required changes were made. If the author chooses not to make a change, a specific reason must be provided.

Once this cycle has been completed, the report is considered ready to publish. A report number and publication date is assigned and the report cover and title page is created by MCEER. A list of MCEER technical reports is also added to the end of the report.

Upon completion of these steps, the author will receive a PDF of the report. Reports are automatically sent to the National Technical Information Service (NTIS), and to University at Buffalo Archives, Science and Engineering Library, and Repository.

The report, together with a brief description (usually the Preface paragraph provided by the author), keywords and table of contents, is added to the online publications catalog, where it can be downloaded by the public.

MCEER no longer prints hard copies of reports. If hard copies are needed, it is suggested that the authors contact UB's Print and Mail group directly for procedures and pricing.

The specific format guidelines which must be followed when submitting technical reports are detailed in the following sections. The purpose of the guidelines is to ensure that all MCEER technical reports follow the same general format and thus fit well together as a series.

## **1.1 What to Submit**

Send the following information to the MCEER Director:

1. PDF file of the report and one hard copy. This initial submission must be in MCEER format.
2. A list of keywords.
3. Six figures or photos that can be used on the report cover. These should be in color and provided as either PDFs or jpps. Please note that the finished size of each image will be approximately 1 5/8" square, so do not select figures with very small text or that cannot be cropped to a square size.
4. A brief (100-150 words) paragraph that describes the major goals and outcomes of the research. This paragraph will be used in the preface of the report and as the report description in the MCEER publications catalog.

## **1.2 Summary of Publication Process**

1. Author submits a PDF and hard copy of a technical report to MCEER for possible publication.
2. If the report is a committee-approved Ph.D. thesis, or is authored by at least two faculty members, no further technical review is necessary.
3. If a technical review is necessary, potential reviewers are contacted. At least one review is required. Technical reviews are forwarded to the author to address as appropriate.
4. An editorial review is conducted to check for spelling, grammar and format inconsistencies as well as to identify text that seems to be lacking or is not well explained. These areas will be marked in pen on the hard copy. The pages will be scanned and returned to the author to address as appropriate. Poorly written manuscripts requiring significant editing will be returned for correction prior to editorial review.
5. Author makes changes as suggested by the editor, and a PDF of the revised report is returned with corrections made, or an explanation as to why changes were not made.
6. Report number is assigned, cover is designed, title page is created and a list of MCEER reports is appended to the back of the report.
7. PDF of the report is distributed to the author and reviewers, and added to the MCEER publications catalog.

## **SECTION 2**

### **OUTLINE OF MCEER TECHNICAL REPORTS**

MCEER technical reports all follow this basic outline:

1. Cover
2. Title page
3. Preface
4. Abstract
5. Acknowledgment
6. Table of Contents
7. List of Illustrations
8. List of Tables
9. Introduction
10. Technical sections
11. Conclusion
12. References
13. Appendices (if applicable)
14. List of MCEER Technical Reports



## **SECTION 3 GUIDELINES FOR TECHNICAL REPORTS**

### **3.1 Front Matter**

The term front matter is applied to the parts of the report which precede the introduction. These parts are the cover, title page, preface, abstract, acknowledgment, table of contents, list of illustrations and list of tables. The format of these parts is described in this subsection.

#### **3.1.1 Cover**

The cover is standard for all reports and is prepared by MCEER with information provided by the authors. The cover of this *Guideline* is in the standard format. The information contained on the cover is as follows:

1. Title
2. Author(s)
3. Technical report number
4. Date of report
5. Institution(s) where the research was conducted
6. Names of sponsor and grant number
7. ISSN number (ISSN 1520-295X)
8. Four photos or illustrations representative of the subject of the report

When researchers from different universities or institutions collaborate on a report, the MCEER participating institutions are listed on the cover. All the other participating institutions are listed in the notice and on the title page.

The inside cover contains a disclaimer, which is entitled Notice. The notice is shown on the inside front cover of this report. If a report is prepared jointly by more than one institution whose research is also sponsored by MCEER, the names and locations of these other organizations are incorporated in the notice.

#### **3.1.2 Title Page**

The title page is standard for all reports and is prepared by MCEER. The title page in this *Guideline* is in the standard format. Title page information is as follows:

1. Title
2. Author(s)
3. Publication date
4. Submittal date
5. Technical report number
6. Award, grant or contract number
7. Other grant or contract numbers (if applicable)

8. Author(s) title, department and institution
9. MCEER's address

Report titles should be concise and accurately identify the subject of the report. They should be no longer than 100 characters. If the report is part of a series, it can be designated Part I. Please send the titles and approximate publication dates of the other reports in the series when the first report is submitted. (See Section 4.1 for more information on report series.)

Two dates are shown on the title page. The submittal date is the date the report is first submitted to MCEER. The publication date is the date MCEER receives a final version of the report (i.e., following the review process).

### ***3.1.3 Preface***

The preface is added to all reports. It is prepared by the author and approved by MCEER. Information included is as follows:

1. Overview of MCEER. These paragraphs are generic and the same in all reports. They are provided by MCEER.
2. Paragraph specific to the sponsor of the research project. This paragraph is not included in reports that are sponsored by MCEER. It is provided by MCEER.
3. Paragraph specific to the report that describes the major goals and outcomes of the research. This paragraph is specific to the project and provided by the lead faculty author.

The preface is page numbered iii and iv (Roman numeral). An example is shown in Figure 3-1.

### ***3.1.4 Abstract***

The abstract appears in all reports and is provided by the author. Its purpose is to summarize the contents of the report in one page. The word **ABSTRACT** is typed in bold with all capital letters and is centered above the text. It is page number v (Roman numeral). The abstract should be limited to approximately 350 words.

### ***3.1.5 Acknowledgment***

The acknowledgment is optional and is supplied by the author. It is page number vii (Roman numeral).

*In this project, procedures are derived to extract rotational components of ground motion from recorded translational data. Two categories of procedures are developed: Single Station Procedure (SSP) and Multiple Station Procedure (MSP). One of the newly developed MSPs, the Surface Distribution Method (SDM), enabled the development of a design procedure for dense seismic arrays, whose primary purpose is to extract rotational ground motions. Design criteria are proposed to determine the length of the array, the number of recording stations and their spatial distribution. An improved definition of accidental eccentricity is proposed for building design and studied for a wide range of one-story elastic systems, and nonlinear isolation systems. A preliminary investigation of the effect of rotational ground motions on the response of several types of structures is performed, and it is found that rotational components of ground motion significantly affect structural response.*

**Figure 3-1 Example of a preface paragraph to be provided by authors**

### **3.1.6 Table of Contents**

The table of contents is in all reports and is provided by the author. It follows the format given in Figure 3-2. It is page number ix (Roman numeral). A blank line is inserted between sections, and each new section appears in bold capital letters. Subsections are not bold and use initial capital letters. Word should be used to automatically generate the table of contents.

The list of illustrations is in all reports and is provided by the author. It follows the same format as the table of contents. The page number is a Roman numeral. Note that if the table of contents is more than two pages, the Roman numeral should start on the next odd number page (i.e., if the last page of the table of contents is xiii, then the list of illustrations should start on xv, not xiv). A blank line is inserted between figures from different sections. Figure 3-3 provides an example.

The list of tables is in all reports (if tables are used) and is provided by the author. It follows the same format as the table of contents and list of illustrations. Figure 3-4 provides an example. The page number is the next odd Roman numeral, depending on the length of the previous sections.

**TABLE OF CONTENTS**

**SECTION 1 INTRODUCTION.....1**

1.1 General Description ..... 2

1.1.1 Assembly.....5

1.1.2 Instrumentation .....5

1.2 Experimental Program ..... 2

**SECTION 2 TEST RESULTS.....3**

**FIGURE 3-2 Technical report table of contents**

**LIST OF ILLUSTRATIONS**

Figure 2-1 Photograph of Test Structure..... 3

Figure 2-2 Dimension of Test Structure..... 4

Figure 3-1 A/D Conversion Subsystem ..... 7

**FIGURE 3-3 Technical report list of illustrations**

**LIST OF TABLES**

Table 2-1 Instrumentation Scheme ..... 3

Table 3-1 Test Sequences ..... 7

**FIGURE 3-4 Technical report list of tables**

## **3.2 Main Body of Text**

The main body of text refers to the introduction, all technical sections, and the conclusion. The format of each of these parts is described in this section.

A times roman font is required, with either a point size of 11 or 12. This report uses a times roman font and a point size of 12.

The line spacing can be either single or 1.5 lines.

The introduction begins the main part of the report. It begins on a separate page and is page number 1. It appears as follows:

### **SECTION 1 INTRODUCTION**

The following rules apply to the introduction, technical sections and conclusion.

1. The right and left margins are equal, and a minimum of one inch of white space is needed on top, bottom and both sides of the page. This applies to pages which contain text or illustrations.
2. Reports should use either single spacing or one and one half line spacing. The first line in a paragraph does not need to be indented.
3. Each new section starts on a new page and has an odd page number (so if the book is printed, all the pages on the left have even page numbers and the pages on the right have odd page numbers). The heading is typed in all capital letters, centered on the page, and bold. For example:

### **SECTION 5 CONCLUSION**

4. Each numbered subheading is typed in bold and is not underlined. For example;

#### **1.1 Purpose**

5. All numbered lists are indented and use Arabic numbers rather than letters or Roman numerals. Letters are only used when part of numbered listings.
6. Page numbers appear at the bottom center of each page, and are consecutively numbered throughout the report. Each new section of the report has an odd page number. If the previous section ends in an odd page number, insert a blank page between it and the beginning of the next section. For example:

Section 1: page 1,2,3; Section 2: page number begins at 5, followed by 6,7,8; Section 3: page number begins with 9, followed by 10,11, etc.

7. Dimensions are spelled out the first time they are referenced in the text. After that, they can be abbreviated.

### 3.3 Figures, Tables, Photographs and Equations

Figures that accompany text in MCEER reports appear near where they are referenced in the text (i.e., they are not grouped together in the back of the book or at the end of a section). They are referenced in the text as “Figure 2-1.” An exception to this is when there is a long series of figures (over 10 pages). In this case, the figures should be placed at the end of the section where they are referenced.

When presenting a series of graphs, group three to four per page whenever possible. The graphs used should be as clear and dark as possible for legibility. The finished area of the figure can be no larger than 6½ by 9 inches, to allow a one inch margin all around.

No handwritten or pencil drawn figures are acceptable. All line drawings must be computer generated.

Figure titles are typed in bold and centered under the figure. The word **Figure** is fully printed out and is followed by the section number, a dash, and figure number for that section. For example:

#### **Figure 2-1 Composite Structure**

Tables also appear near where they are referenced in the text. They should be embedded within the text. Tables are referenced within the text as “Table 2-4.”

Table titles are typed in bold and centered over the table. The word **Table** is followed by the section number, a dash, and table number for that section. For example:

#### **Table 4-2 Maximum Structural Response**

Photographs used as figures should be embedded into the text. They should be treated as regular figures - i.e., no larger than 6½ by 9 inches, figure titles centered below the photograph and page numbered as appropriate.

Equations are often used throughout the text and should follow the basic guidelines given below. Equations should be either indented approximately three spaces from the left margin (see below) or centered.

$$J = (KX^2(t) + Bk_c u_c(t))dt \quad (1-1)$$

where  $X(t)$  is the displacement relative to the base,  $u_c(t)$  is the displacement of the actuator,  $K$  is the structural stiffness,  $k_c$  is the stiffness of the tension cable, and  $B$  is the weighting factor.

Equations are numbered as follows: the number of the section followed by a dash, followed by the equation number, surrounded by parenthesis. The equation number is right justified. When referred to within the text, equations are referenced as “(1-1).”

### **3.4 Units of Measure**

Either U.S. customary units or SI metric units can be used.

### **3.5 References**

References appear as the last section of the report and are assigned the last section number, before the appendices. The list is in alphabetical order, single spaced with a blank line separating each entry. The following form is used:

Author(s), (Year), “Title”, Report number, Published by, Date, Pages (if applicable).

The title uses initial capital letters, as does the name of the publication. When references are cited in the text, they should appear as “(author, year).”

### **3.6 Appendices**

Appendices are used primarily to include auxiliary information. Examples are extensive derivations, computer listings and notation. They are page numbered following the references with the next odd number. If the report is already 200 or more pages long, the appendices will be provided in a separate PDF file.

### **3.7 List of Technical Reports**

A list of technical reports is added to every report by MCEER. This list appears in the back of the report, following all author-supplied information. It lists all MCEER technical reports which have been assigned numbers, up to and including the current report.



## **SECTION 4 SPECIAL CIRCUMSTANCES**

### **4.1 Series of Reports**

If you are the author of several reports that are intended to form a series, special rules are applied to ensure that the reports are properly linked. These are:

1. Use a consistent title, i.e. same title, Part I: Unique title. For example:

**Evaluation of Seismic Retrofit  
of Reinforced Concrete Frame Structures:**

**Part I - Experimental Performance of  
Retrofitted Subassemblages**

and

**Evaluation of Seismic Retrofit  
of Reinforced Concrete Frame Structures**

**Part II - Experimental Performance and Analytical Study  
of a Retrofitted Structural Model**

2. Identify all the parts of the series when the first part is submitted.
3. The abstract in all the reports in the series should contain the same introductory paragraph, and then be tailored to the specific report. The final paragraph should identify the other reports in the series.
4. The introduction should contain an overview of all the reports in the series. This overview should be followed by introductory material specific to the report.
5. The reports should contain numerous references to the other reports in the series. These should follow the standard reference format with the Part x designator added for clarity. For example (Bracci, 1992, Part II of the x series).

### **4.2 Software**

MCEER's policy concerning software is to refer inquiries back to the developer. If more than one MCEER investigator is involved in the development of such software, please designate who should receive inquiries when the report is submitted to MCEER.

### **4.3 Other Supplemental Information**

Supplemental information about a report should be forwarded along with the report in a downloadable format (i.e., PDF, zip file, etc.). This information will be made available via the publications catalog. Be sure to reference this material in the table of contents of the report.

## MCEER Technical Reports

MCEER publishes technical reports on a variety of subjects written by authors funded through MCEER. These reports are available from both MCEER Publications and the National Technical Information Service (NTIS). Requests for reports should be directed to MCEER Publications, MCEER, University at Buffalo, State University of New York, 133A Ketter Hall, Buffalo, New York 14260. Reports can also be requested through NTIS, P.O. Box 1425, Springfield, Virginia 22151. NTIS accession numbers are shown in parenthesis, if available.

- NCEER-87-0001 "First-Year Program in Research, Education and Technology Transfer," 3/5/87, (PB88-134275, A04, MF-A01).
- NCEER-87-0002 "Experimental Evaluation of Instantaneous Optimal Algorithms for Structural Control," by R.C. Lin, T.T. Soong and A.M. Reinhorn, 4/20/87, (PB88-134341, A04, MF-A01).
- NCEER-87-0003 "Experimentation Using the Earthquake Simulation Facilities at University at Buffalo," by A.M. Reinhorn and R.L. Ketter, not available.
- NCEER-87-0004 "The System Characteristics and Performance of a Shaking Table," by J.S. Hwang, K.C. Chang and G.C. Lee, 6/1/87, (PB88-134259, A03, MF-A01). This report is available only through NTIS (see address given above).
- NCEER-87-0005 "A Finite Element Formulation for Nonlinear Viscoplastic Material Using a Q Model," by O. Gyebi and G. Dasgupta, 11/2/87, (PB88-213764, A08, MF-A01).
- NCEER-87-0006 "Symbolic Manipulation Program (SMP) - Algebraic Codes for Two and Three Dimensional Finite Element Formulations," by X. Lee and G. Dasgupta, 11/9/87, (PB88-218522, A05, MF-A01).
- NCEER-87-0007 "Instantaneous Optimal Control Laws for Tall Buildings Under Seismic Excitations," by J.N. Yang, A. Akbarpour and P. Ghaemmaghami, 6/10/87, (PB88-134333, A06, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0008 "IDARC: Inelastic Damage Analysis of Reinforced Concrete Frame - Shear-Wall Structures," by Y.J. Park, A.M. Reinhorn and S.K. Kunnath, 7/20/87, (PB88-134325, A09, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0009 "Liquefaction Potential for New York State: A Preliminary Report on Sites in Manhattan and Buffalo," by M. Budhu, V. Vijayakumar, R.F. Giese and L. Baumgras, 8/31/87, (PB88-163704, A03, MF-A01). This report is available only through NTIS (see address given above).
- NCEER-87-0010 "Vertical and Torsional Vibration of Foundations in Inhomogeneous Media," by A.S. Veletsos and K.W. Dotson, 6/1/87, (PB88-134291, A03, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0011 "Seismic Probabilistic Risk Assessment and Seismic Margins Studies for Nuclear Power Plants," by Howard H.M. Hwang, 6/15/87, (PB88-134267, A03, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0012 "Parametric Studies of Frequency Response of Secondary Systems Under Ground-Acceleration Excitations," by Y. Yong and Y.K. Lin, 6/10/87, (PB88-134309, A03, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0013 "Frequency Response of Secondary Systems Under Seismic Excitation," by J.A. HoLung, J. Cai and Y.K. Lin, 7/31/87, (PB88-134317, A05, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0014 "Modelling Earthquake Ground Motions in Seismically Active Regions Using Parametric Time Series Methods," by G.W. Ellis and A.S. Cakmak, 8/25/87, (PB88-134283, A08, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0015 "Detection and Assessment of Seismic Structural Damage," by E. DiPasquale and A.S. Cakmak, 8/25/87, (PB88-163712, A05, MF-A01). This report is only available through NTIS (see address given above).

- NCEER-87-0016 "Pipeline Experiment at Parkfield, California," by J. Isenberg and E. Richardson, 9/15/87, (PB88-163720, A03, MF-A01). This report is available only through NTIS (see address given above).
- NCEER-87-0017 "Digital Simulation of Seismic Ground Motion," by M. Shinozuka, G. Deodatis and T. Harada, 8/31/87, (PB88-155197, A04, MF-A01). This report is available only through NTIS (see address given above).
- NCEER-87-0018 "Practical Considerations for Structural Control: System Uncertainty, System Time Delay and Truncation of Small Control Forces," J.N. Yang and A. Akbarpour, 8/10/87, (PB88-163738, A08, MF-A01). This report is only available through NTIS (see address given above).
- NCEER-87-0019 "Modal Analysis of Nonclassically Damped Structural Systems Using Canonical Transformation," by J.N. Yang, S. Sarkani and F.X. Long, 9/27/87, (PB88-187851, A04, MF-A01).
- NCEER-87-0020 "A Nonstationary Solution in Random Vibration Theory," by J.R. Red-Horse and P.D. Spanos, 11/3/87, (PB88-163746, A03, MF-A01).
- NCEER-87-0021 "Horizontal Impedances for Radially Inhomogeneous Viscoelastic Soil Layers," by A.S. Veletsos and K.W. Dotson, 10/15/87, (PB88-150859, A04, MF-A01).
- NCEER-87-0022 "Seismic Damage Assessment of Reinforced Concrete Members," by Y.S. Chung, C. Meyer and M. Shinozuka, 10/9/87, (PB88-150867, A05, MF-A01). This report is available only through NTIS (see address given above).
- NCEER-87-0023 "Active Structural Control in Civil Engineering," by T.T. Soong, 11/11/87, (PB88-187778, A03, MF-A01).
- NCEER-87-0024 "Vertical and Torsional Impedances for Radially Inhomogeneous Viscoelastic Soil Layers," by K.W. Dotson and A.S. Veletsos, 12/87, (PB88-187786, A03, MF-A01).
- NCEER-87-0025 "Proceedings from the Symposium on Seismic Hazards, Ground Motions, Soil-Liquefaction and Engineering Practice in Eastern North America," October 20-22, 1987, edited by K.H. Jacob, 12/87, (PB88-188115, A23, MF-A01). This report is available only through NTIS (see address given above).
- NCEER-87-0026 "Report on the Whittier-Narrows, California, Earthquake of October 1, 1987," by J. Pantelic and A. Reinhorn, 11/87, (PB88-187752, A03, MF-A01). This report is available only through NTIS (see address given above).
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