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AEES is a Technical Society of IEAust The Institution of Engineers Australia and is affiliated with IAEE

3/2000

AEES Newsletter

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PRESIDENT'S PERAMBULATIONS

Preparations for the AEES Conference 2000 are well in hand and I trust that you have indicated your intention of attending and, if possible, submitted an abstract for consideration.

Five applications for the AEES Earthquake Engineering Research Scholarship were received. These were assessed by all members of the National Committee and on the basis of this assessment, the Executive decided to award two scholarships, each valued at \$2,000. Congratulations to Amy Brown at SRC, Melbourne and Jason Chaytor at QUT, Brisbane. Amy will seek to improve earthquake hazard analysis in the Strzlecki Ranges of South Gippsland by the identification of active faults while Jason will attempt to image and characterize the fault responsible for the 1989 Newcastle earthquake.

The proposed new structure and organization arrangements for the Institution of Engineers, Australia require each Technical Society to select a College to which it wishes to report and be accountable to. I have requested that AEES be accountable to the Board of Engineering Practice to ensure that the wide ranging effects of earthquakes are not overlooked and to highlight the multidisciplinary nature of our membership.

I hope that some of you were able to apply for an Australian Disaster Research Grant and were successful. Please let us know if you were.

The National Committee on Engineering Heritage sought suggestions for their oral history and project plaquing program. I suggested two Adelaide buildings which had a hefty earthquake engineering input be considered for plaquing and that our founding President and life member, Charles Bubb, be interviewed. Let me know if you have additional suggestions.

As foreshadowed at the AGM in Sydney, I have drafted a proposed new Constitution for the consideration of members. The proposed Constitution, with some explanatory notes, appears elsewhere in this Newsletter. Please consider it carefully, forward comments, and be prepared to vote on its adoption at the AGM in Hobart.

Bill Boyce

AEES 2000 Conference and AGM Dams, Fault Scarps and Earthquakes Venue: Geology Department, University of Tasmania, Hobart Date: 15 - 17 November 2000 Excursion: Lake Edgar Fault Scarp and Gordon Dam.

The Society

President - Secretary	Bill Boyce (Kinhill, Qld) Bussell Cuthbortson (Old Uni)				
Tues annon	Calin Lanam (Old Uni)				
Treasurer -	Conn Lynam (Qid Uni)				
The state representatives are:					
NSW	Michael Neville				
Qld	Gary Huftile				
Vic	John Wilson				
Tas	Vagn Jensen				
ACT	Kevin McCue				
SA	Mike Griffith				
WA	Peter Gregson				
IAEE National D	elegate is John Wilson (UniMelb).				

The AEES Webmaster is Vaughan Wesson (SRC). Barbara Butler manages the Secretariat from Melbourne University.

The Society website/email list

Dear AEES Members,

The AEES web site is at <u>www.aees.org.au</u> We will again use an online form for registrations for the November AEES conference in Hobart and are always looking for suggestions on other things to be included besides copies of the newsletter and details about relevant up coming conferences:

- details of interesting recent publications
- significant research projects in earthquake engineering (in Australia?)
- links to other relevant Web sites

Please send me your contributions/suggestions via email

Cheers Vaughan Wesson

The AEES email list is operated by the Seismology Research Centre, Melbourne. If you would like to register please notify Vaughan Wesson vaughan@seis.com.au

NUGGETS FROM THE NEWSGROUP -A Regular Feature By Charles Bubb

The following recent discussion is about the estimated magnitudes of the New Madrid USA earthquakes of 1811 and 1812 which is relevant to the wider question on how big can intraplate (eg Australian) earthquakes get? The magnitudes were estimated from the extent of the felt area and area of damage. The first poster is Susan Hough of USGS who is revising down the estimated magnitudes and the respondent, who agrees with her, is Roger Musson of the British Geological Survey.

Susan Hough wrote: They also weren't M8 events (to set the story straight); see http://www-socal.wr.usgs.gov/hough At the following site they're ranked as 8.0+MSn. So what is the difference between the two? http://wwwneic.cr.usgs.gov/neis/eqlists/USA/1811-

http://wwwneic.cr.usgs.gov/neis/eqlists/USA/1811-1812.html

Hough: My results are very recent -- the paper is in press at the moment. Some historic earthquake lists include New Madrid as 8++, as a surface-wave magnitude estimate. These values were based on analysis done ~20 years ago. In the mid-90's, a more careful analysis was done, comparing the extent of the earthquakes' effects with those of large earthquakes for which there are instrumental data. This work, by Arch Johnston, obtained Mw estimates of 7.8-8.1. The magnitudes come down even more in my analysis because my co-authors and I concluded that the original interpretation of original accounts (for intensity values) had been biased, for a couple of reasons. I've been having an ongoing debate with a

couple of colleagues who don't agree with my interpretation, but a lot of people do seem to accept my arguments--the solution hangs together nicely considering all of the direct and indirect information about the New Madrid zone and sequence.

Roger Musson responded:

Much more reasonable results. A number of people in Europe have questioned the size of these events in the last ten years. The sizes of the previously-used isoseismals look to be distorted by being based on reports chiefly from river valleys (soft sediments) and some of the intensity values always looked a bit iffy. In 1993 I made a plot taking the largest NW European earthquake and dumping it onto the Mississippi Valley at the same scale. This was an earthquake of about 5.6 Ms (6.1 ML) and the isoseismals were about half the radius of the 1811 event, which makes a magnitude of 8+ not very believable. Also, the New Madrid source seems much too small for great earthquakes.

The current trend seems to be to revise downward some of the large historical earthquakes. New Madrid has played a large part in raising the hazard estimates in the Eastern US. Hough's paper is sure to generate a lively debate.

Charles

Earthquakes in Australia ML 3 -

January to May 2000

This extract is from the AGSO database which includes data from Primary Industries and Resources SA, the Seismology Research Centre Victoria and Universities of Tasmania and Queensland.

Date	Time UTC	Lat	Long	ML	Place
Jan					
1	115522.6	-37.235	147.665	3.2	Ensay, Vic
7	30227	-18.1	121.43	3	Off WA coast near Broome
10	205725.4	-28.31	124.3	3	Cosmo Newberry area, WA
12	212454.2	-19.785	133.336	3.1	Tennant Creek, NT
13	22412.3	-16.51	124.05	4	Wyndham Range, WA. Felt
20	150115.4	-24.13	114.05	3.4	Near Minilya WA
27	52135.6	-43.054	146.395	3.5	Lake Edgar, Tas
Feb					
2	232420.7	-33.73	118.11	3.2	Nyabing WA
6	125132.4	-17.46	122.07	3.2	Near Broome WA
7	143825.1	-17.34	121.98	3.2	Broome area WA
8	42635.9	-23.84	128.87	3.1	Lake Mackay area WA
8	133710.7	-13.61	122.42	4.1	Scott Reef WA
15	174445.5	-14.118	127.654	3.4	Joseph Bonaparte Gulf WA
21	40612.3	-16.93	120.16	3.8	Rowley Shoals WA
23	140524.3	-16.21	120.73	3	Indian Ocean
24	204456	-30.75	117.79	3.3	Bencubbin WA. Felt MM IV
27	174902.9	-34.465	148.434	3.1	Harden NSW. Minor damage

Mar

1	61115.5	-12.61	123.466	3.2	Near Ashmore Reef, WA
1	221119.8	-18.1	119.29	3	Rowley Shoals area, WA
11	32936.9	-33.7	138.47	3	Clare SA
16	132629.8	-37.478	146.105	3.8	Gaffneys Creek Vic, Felt
19	230748.2	-24.1	113.19	3	Off WA coast Carnarvon
20	173859	-17.3	145.6	3.1	Lake Eacham Qld. Felt
22	194507.3	-16.69	120.65	3	Rowley Shoals area WA
27	54801.1	-29.6	137.43	3.7	Lake Eyre South SA
Apr					
1	132914.2	-25.186	111.629	4.3	Indian Ocean
3	10836.2	-11.884	117.398	4.8	Indian Ocean
3	110932.5	-35.048	134.765	3	Port Lincoln area SA
13	31437.9	-16.421	128.635	3.8	Argyle area WA
16	2254.4	-12.24	118.56	4	Indian Ocean
21	115217.6	-35.528	134.334	3.5	Gt Australian Bight
May					
14	123941.5	-22.977	112.901	4.7	Off WA coast Learmonth
17	172946.8	-38.639	143.616	3.2	Apollo Bay Vic. Felt
22	142509.9	-25.326	116.945	3	Landor area, WA.
25	42538.6	-20.722	114.792	3.1	Indian Ocean

Clearance offer on Conference Proceedings

Barbara Butler still has copies of our early conference proceedings, more than she can store. We can't sell them quickly so will give them away! Proceedings are yours for the price of postage: fax: 03 8344 4616 or b.butler@eng.unimelb.edu.au

The AEES subscription year will change in 2001; from calendar to fiscal year. It is expensive to send each member an individual reminder that fees are due so please help us by sending your subscription for 2000/01 to AEES (attn: Barbara Butler, Civil and Environmental Engineering Dept, Melbourne University Parkville Vic 3052) or renew through IEAust's annual subscription system by marking AEES your preferred Society. If you change address or if you know a member who is not receiving the newsletter please advise the Secretary, many newsletters are returned.

Adelaide University Earthquake Engineering Research – Update Dr Mike Griffith

Since my last report, two large ARC-funded research projects have nearly been completed and a new project, jointly funded by the Commonwealth Government and the Clay Brick and Paver Institute of Australia, has commenced.

What follows is a quick summary of the two nearly completed projects followed by an overview of the aims and objectives of the new project.

Project 1: Non-linear dynamic analysis of VA reinforced concrete frames

^A This project, which began in January 1997, constitutes a 3-year investigation into the non-linear modelling of concrete frame structures under severe earthquake loading. The non-linear methods provide the basis for a new and improved approach to seismic design, whereby highly undesirable behaviour, such as the A development of "weak-column strong-beam" collapse mechanisms, can be detected and avoided. This in turn will enable designers to achieve well-conditioned structural response to earthquake loading, with a high degree of protection against collapse and hence loss of life and property.

The analytical procedures have the ability to fully represent the non-linear stress-strain properties of concrete and steel reinforcement, account for large deformations, model non-linear shear deformations and buckling of longitudinal reinforcing steel, and mth model and identify the critical collapse mechanism (weak link) for the structure. The analytical procedures are able to model the structural behaviour up to and including total collapse. The accuracy of the numerical procedure is currently being verified with a small number of earthquake shaking-table tests. The final results of this project should be able to be reported at the Society's annual technical seminar in Hobart in 2000.

References:

Analysis of the collapse behaviour of concrete frames under severe dynamic loading, H. R. Joshi, A. Kawano, M. C. Griffith and R. F. Warner, *Proceedings of Australian Earthquake Engineering Society*, Brisbane, pp. 14.1-14.4, (1997).

Analysis of the behaviour and collapse of concrete frames subjected to severe ground motion, A. Kawano, M.C. Griffith, H.R. Joshi, R.F. Warner, Research Report No. R163, Department of Civil and Environmental Engineering, The University of Adelaide, 76p, (1998).

Project 2: The seismic integrity of walls and connections in unreinforced brick masonry buildings

This project also began in March 1997. The aims of this research were achieved and consisted of: improving our understanding of how unreinforced brick masonry buildings behave under earthquake loading; experimentally establishing the dynamic strength of key components in the seismic forced resisting system; and developing an improved theoretical model for the aseismic design of URM buildings.

An intensive program of experimental work was carried out to establish the seismic strength of typical connection details that comply with the AS3700 guidelines and are commonly used in practice. The results of this work have established that friction is capable of reliably supplying shear forces up to 30% of the normal force transferred between brick walls and concrete floor slabs. An amendment to AS3700 has already been issued to reflect this finding.

The experimental results have also been used to validate modified analytical methods that are suitable for the design of "dynamically-loaded" brick walls. This part of the project showed that current design methods are often extremely conservative but can also sometimes be highly unconservative. It has been shown that a new "displacement-based" method gives more reliable predictions of wall behaviour and recommends that a displacement-based design procedure be adopted. The preliminary results of this work were published at last year's (1999) AEES technical seminar in Sydney. The final results will be presented in Hobart in 2000.

References:

- On the seismic capacity of typical DPC and slip joints in unreinforced masonry buildings, M. C. Griffith and A. W. Page, *Australian Journal of Structural Engineering*, The Institution of Engineers, Australia, Vol.1, No.2, pp. 133-140, (1998).
- Seismic response behaviour of unreinforced masonry walls by shaking table testing and time-history analyses, B. Rodolico, K. Doherty, N. Lam, M. Griffith and J. Wilson, *Proceedings of the 16th Australasian Conference on the Mechanics of Structures and Materials*, Sydney, pp. 581 – 586, (1999).
- Modelling of earthquake induced collapse of unreinforced masonry walls combining force and displacement principles, K. Doherty, N. Lam, M. Griffith and J. Wilson, *Proceedings of the* 12th World Conference on Earthquake Engineering, Auckland, New Zealand, (2000).
- Modelling the collapse behaviour of unreinforced masonry walls during the Newcastle earthquake, K. Doherty, B. Rodolico, N. Lam, M. Griffith and J. Wilson, *Proceedings of Australian Earthquake Engineering Society*, Sydney, Paper No. 6, (1999).
- Seismic Design of Connections in Unreinforced Masonry Buildings, M.C. Griffith and A. Page, *Proceedings of the 1998 Structural Engineers World Congress*, San Francisco, (1998).

Project 3: Design of unreinforced masonry walls for lateral loading

The new Australian Masonry Code has adopted the virtual work method for the analysis and design of walls subjected to lateral loading. This method uses energy principles but is semi-empirical, is currently only applicable to walls with a limited range of openings, and ignores the beneficial effects of compressive stress, particularly in relation to the evaluation of the energy absorbed in the joints. This jointly funded experimental and theoretical investigation will address these shortcomings by

developing "mechanics-based" numerical procedures to replace the empirical aspects of the present design method. This will enable a full range of wall geometries and openings to be catered for.

A key feature of this project is the unusually high standard of the industry contribution to the project. Dr Stephen Lawrence is representing the Clay Brick Paver Institute of Australia on this project. Before taking up his current position with SPL Consultants, Dr Lawrence spent many of his 25 years at CSIRO conducting research into the field of unreinforced masonry construction. He was also actively involved in the development of AS3700 and the virtual work method approach in AS3700.

References:

The new AS3700 approach to lateral load design, S.J. Lawrence and R.J. Marshall, *Proceedings, 5th Australian Masonry Conference*, Gladstone, pp. 227-237, (1998).

Closure of Qld Seismograph Network

Unbelievably the earthquake monitoring network run by the University of Queensland (UQ) for the State Government has closed. AGSO has four stations at Roma, Quilpie, Mt Isa and Charters Towers but monitoring of the populated east coast region which was out-sourced to UQ by the government in 1993 has ceased while the Government undertakes a review of costs and effectiveness.

The following is an extract from a press statement by Professor Peter Mora of QUAKES.

I regret to inform you that QUAKES is no longer able to provide statewide earthquake monitoring and hazard services in Queensland due to lack of state government funding. The closure of the program will result in loss of valuable expertise and data. As of Monday April 3rd, monitoring activities as well as work towards updating the Queensland hazard map for incorporation into the new Australia/New Zealand earthquake standard have been terminated.

Our senior seismic network staff has been given notice by The University that his contract will expire as of May 5. Other positions involved in the statewide monitoring operations will become redundant. Following is an explanation of recent events that have resulted in closure of the earthquake monitoring program.

On Friday 24 March, The University of Queensland was informed by State government officials that the government was unable to provide adequate interim funding to sustain the earthquake monitoring program during 2000. It was further explained that while the government recognised the need for seismic monitoring and a network upgrade, it would not be possible to secure funding in the next budget. Therefore, it had been decided to cease funding earthquake monitoring and to "save" money. It was suggested that these savings could allow the network to be upgraded some time in the future (cartoon compliments Sunday Mail July 09, 2000).



Large Regional Earthquakes

Sulawesi Tengah Earthquake and Tsunami A shallow earthquake occurred in central Sulawesi on May 4, 2000 12.21pm local time. The earthquake magnitude is Mw 7.4, Ms 7.3 (USGS) and Magnitude Richter 6.5 (BMG), while the epicenter is 0.9 South, 123.4 East (USGS) and 1.4 South, 123.6 East (BMG). Indonesian mass media reported that the earthquake had generated a tsunami of about 3 - 5 meters and killed at least 9 people. At least two villages were swept by the tsunami.

Report from the region via US cable traffic:

On May 5, huge tidal waves hit the Banggai Islands, killing at least nine people and destroying hundreds of houses in seven subdistricts in Banggai. The tsunami waves, reportedly measuring up to six meters in height inundated two villages on Peleng island, Kayuntayo and Uwedikum.

In Luwuk (607 kilometers east of Palu, capital of Central Sulawesi), a pier was seriously damaged, tens of houses collapsed, and a market burned down.

Local district administration in Luwuk and on Peleng Island has set up tents to temporarily shelter people who lost their homes and supplied them with rice and medicines. A task force of local government, Ministry of social affairs and NGO (world vision) has been formed, and until now has gathered 13.5 tons of rice and 115 boxes of instant noodles that will be targeted to four worst-hit sub-districts, namely Tinangkung, Bulagi, Balantak and Totikum. Christina Neal

Geoscience Advisor

USGS and Office of US Foreign Disaster Assistance

Cocos Islands Earthquake

U.S. Geological Survey

NEIC Quick Epicenter Determination UTC Time Lat Long Depth mb MS SD NS June 18 1444 12.7 13.962S 97.473E 10G 6.8 7.8 1.2 119 Indian Ocean Mw 7.8 (HRV), 7.6 (GS)

Felt strongly in the Cocos Islands but no damage reported there. Felt (II) at Bengkulu, Jakarta and Padangpanjang, Indonesia but not on mainland Australia. Local seiche in the Cocos Island lagoon. This is the largest intraplate earthquake known to have occurred in the Indian Ocean – magnitude 7.8. The mechanism was predominantly strike-slip. There were several aftershocks up to magnitude 5.7 in the following days. A map and seismogram can be viewed on the AGSO webpage at: www.agso.gov.au

Letters to the Editor:

Subject: 2 POST-DOCS IN PETROLEUM/STRUCTURAL GEOLOGY/GEOMECHANICS THE UNIVERSITY OF ADELAIDE

Dear Colleague,

Perhaps you'd be willing to post or otherwise circulate this advertisement to anyone that might be interested in applying.

Many thanks, Richard Hillis

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW (Ref: 10365) (Fixed-term) Fault Seals to Hydrocarbon Reservoirs

RESEARCH FELLOW (Ref: 10366) (Fixed-term) Geological Disposal of Carbon Dioxide National Centre for Petroleum Geology and Geophysics

The NCPGG is a joint venture of the University of Adelaide and the University of South Australia and is a member of the Australian Petroleum Cooperative Research Centre (APCRC). The NCPGG is wellequipped with hard- and soft-ware related to petroleum geology and geophysics including Schlumberger's GeoFrame system (eg. IESX and BorView) and Paradigm's Geolog software.

Two positions are available. A postdoctoral fellow is sought to work on fault seals and other structural geology/petroleum geomechanics projects including tight gas exploration in the Cooper Basin and in situ stresses and neotectonics in Brunei. You should:

• have a higher degree in geology, geophysics or engineering;

• have expertise in fault seals, structural geology and/or geomechanics and;

• be prepared to collaborate in a multi-disciplinary research group and in a variety of projects.

Salary \$38,414-\$46,786 (A minimum of \$43,584 is payable to the holder of a PhD)

A research fellow is sought to work on geomechanical aspects of the geological disposal of CO2

(GEODISC). This project is funded by the APCRC's GEODISC program.

The role of the position is to assess the risk of CO2 injection influencing seal integrity, eg. by activating faults and fractures. You should:

• have a PhD in geology, geophysics or engineering and expertise in geomechanics;

• be prepared to collaborate within the multidisciplinary and multi-institutional GEODISC research group.

Salary \$49,249-\$54,484

These fixed-term positions are available from 1 July 2000 for a period of 2 years.

Further information including selection criteria and applications in duplicate addressing the selection criteria and quoting the reference number should include names and addresses of three referees to Professor R Hillis, NCPGG, University of Adelaide, Thebarton Campus, South Australia

Prof. Richard Hillis State of South Australia Chair National Centre for Petroleum Geology and Geophysics (NCPGG)

ph (dir): 61 (0)8 8303 3080 ph (sec): 61 (0)8 8303 4299 fax: 61 (0)8 8303 4345 e-mail: rhillis@ncpgg.adelaide.edu.au web: www.ncpgg.adelaide.edu.au

IEAust have a comprehensive information database (for mainly Australian articles and publications) at: <u>http://www.ieaust.org.au/engine/about.htm</u>

Would be very useful for any Australian engineer

Regards Russ Cuthbertson

FORTHCOMING CONFERENCES

• 9 August 2000 Geotechnical Engineering – Computer software and methods. Sydney. Contact Paul Hewitt, Golder Assoc at phewitt@golder.com.au

• 10 - 15 September 2000. European Seismological Commission, Lisbon Portugal. A workshop will be held there on "Historical Instruments and Documents in Seismology" (WSB-3).

• 16 - 20 October 2000. Japan – 2nd Workshop of The APEC Cooperation for Earthquake Simulation ACES. Details next issue.

• 15 – 17 November 2000. *AEES* AGM and Annual Seminar in Hobart Tasmania. Organiser Vagn Jensen.

The conference will include a visit to the Gordon Dam, one of the World's highest thin-arch concrete dams.

• March 2001. The Australasian Structural Engineering Conference will be held on the Gold Coast.

• The 12th European Conference on Earthquake Engineering will be held in London in 2002 (see flyer enclosed).

NEW BOOKS (& OLD) / REPORTS

Seismicity Patterns Their Statistical Significance & Physical Meaning, Ed Wyss, M. Shimazaki, K. and Ito, A. Birkhauser Verlag AG, 1999

This collection contains papers on seismicity patterns, their interpretation and relevance to predicting earthquakes. The interpretation of seismicity patterns has become somewhat controversial. Some researchers present case histories suggesting that earthquakes may be predicted by increased seismic moment release or seismic quiescence and, in general, by understanding the processes of self-organized criticality. Others deny these hypotheses. Although the problem of recognising foreshocks in real time remains unsolved, new properties of microearthquakes as a function of time are coming to light. Computer modeling of seismicity also is advancing in sophistication and relevance. Surprisingly, b-values seem to hold substantial information about varying local conditions of earthquake generation.

Perils of a Restless Planet. Ernest Zebrowski jnr. Cambridge Uni Press. RRP \$29.95

- Australian Seismological Report 1996 AGSO Sales Centre ph: 02 6249 9519, fax: 02 6249 9982
- Acceptable Risks for Major Infrastructure. Eds P Heinrichs and R Fell, Balkema 1995. Proceedings of the Seminar on Acceptable Risks for Extreme Events in the Planning and Design of Major Infrastructure. Sydney NSW Australia, 26 - 27 April 1994
- Report on the January 17, 1995 Great Hyogo-Ken Nambu (Kobe) Earthquake. Lam Pham & M Griffith. CSIRO DBCE 95/175(M)
- Isoseismal Atlas of Australian Earthquakes Part 3 AGSO Record 1995/44. AGSO Sales Centre phone: 06 249 9519, fax: 06 249 9982
- Earthquakes and Geological Discovery by Bruce Bolt. W H Freeman and Co., 1993
- Risks and Realities, Centre for Advanced Engineering University of Canterbury, Christchurch New Zealand
- This book mainly presents the results of an investigation into the vulnerability of lifelines serving metropolitan Christchurch
- Seismogenic and tsunamigenic processes in shallow subduction zones, eds. J. Sauber and R. Dmowska, Birkhauser Basel, 1999. (reprinted from a recent issue of Pure and Applied Geophysics). US\$44.50



Australian Earthquake Engineering Society

PROPOSAL FOR REVISION TO AEES CONSTITUTION

For some time our practice has not been consistent with the provisions of our Constitution. At the AGM in Sydney last year, I indicated that I would be drafting revisions to the Constitution for the consideration of members. A proposed new Constitution is set out below, together with brief notes on the changes. The present Constitution is also re-printed below for information.

The proposal is published in the Newsletter for information and comment and it is intended that we vote on its adoption at the AGM in Hobart.

Proposed AEES Constitution

1. Name

The name of the Society shall be -

AUSTRALIAN EARTHQUAKE ENGINEERING SOCIETY

2. Objective

The objective of the Society is to reduce earthquake risk by:

- advancing the science and practice of earthquake engineering and engineering seismology
- improving understanding of the impact of earthquakes on the physical, social, economic, political and cultural environment,
- advocating comprehensive and realistic measures for reducing the harmful effects of earthquakes.

3. Non Profit Organisation

The assets and income of the Society shall be applied exclusively to the promotion of the objects of the Society and no portion shall be paid or distributed directly or indirectly to the members of the Society except as bona fide remuneration for services rendered or expenses incurred on behalf of the Society.

4. Activities

The activities of the Society are directed towards providing national leadership, facilitation and coordination of professional society activities in the practice of earthquake engineering and engineering seismology.

Such activities include:

- organization of technical conferences, symposia and meetings,
- publishing a newsletter and other technical publications,
- promotion of research, development and improved practice,
- acting as the Australian representative in dealings with the International Association of Earthquake Engineering and other regional earthquake engineering associations and interest groups.

5. Membership

Membership of the Society shall be open to persons and organisations who are interested in the objective and activities of the Society.

6. Subscription

The annual subscriptions for membership shall be determined by the National Committee from time to time and shall be payable to the Society on the 30^{th} day of the financial year then commencing.

7. National Committee

The affairs of the Society shall be managed by a National Committee elected by the members and consisting of an Executive and State representatives (one from each State).

The Executive shall comprise:

- Chairman (President) of the Society
- Secretary of the Society
- Treasurer of the Society

The Committee shall be elected annually, normally at the Annual General Meeting of the Society.

The Executive members shall occupy their position for no more than three years.

8. Chapters

The Society may have chapters in such states or regions as the Executive shall from time to time decide.

9. Dissolution of Society

In the event of the Society being dissolved, the amount which remains after such dissolution and the satisfaction of all debts and liabilities shall be paid and applied by the Society in accordance with its powers to any organisation which has similar objects and which has rules prohibiting the distribution of its assets and income to its members.

Notes on proposed constitution clauses

- 1. name unchanged.
- 2. based on the EERI objectives and used with their permission (refer President's Perambulations Newsletter 1/99)
- 3. required to confirm tax exempt status
- 4. based on our current objectives
- 5. membership broadened to include organisations
- 6. modified to allow for the proposed change to the IEAust financial year
- 7. adjusted to reflect our recent practice
- 8. provide for local chapters
- 9. required to confirm tax exempt status.

I have adopted a minimalist approach to the proposed amendment. I believe the approach of the original proponents of the Society in formulating a brief constitution is sound and I do not see the need to burden ourselves with unnecessary or restrictive rules.

Present AEES Constitution

At formation of the Society the Constitution was as set out below:

1. The name of the Society shall be –

AUSTRALIAN EARTHQUAKE ENGINEERING SOCIETY

- 2. The objects of the Society are the promotion and advancement of the practice of earthquake engineering and engineering seismology including carrying out learned Society functions by
 - (a) organization of technical conferences, symposia and meetings;
 - (b) bringing out learned and other technical publications;
 - (c) promotion of research, development and improved practice;
 - (d) acting as the Australian representative in dealings with the International Association of Earthquake Engineering and other regional earthquake engineering associations and interest groups.
- 3. Membership of the Society shall be open to persons with interests in earthquake engineering and engineering seismology.
- 4. The Society shall elect a National Committee which shall in turn elect a Chairman, Secretary-Treasurer and four other members, all of whom are to be elected at the general body meeting to be held once in two years. The quorum for election of the National Committee comprising Chairman, Secretary-Treasurer and four elected members shall comprise not less than 8 members including the proxies from members who are unable to attend the general body meeting.
- 5. The annual subscription for membership shall be determined by the National Committee from time to time and payable to the Society on 1 January for the year then commencing.

At the 1998 AGM in Perth, the Constitution was amended by the following resolution "that Executive Members of the Society be able to occupy their position for no more than three years".