



WSSI-AN IAEE'S UNDERTAKING FOR IDNDR

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SUMMARY

In 1984 Frank Press gave a keynote address during the 8WCEE held in San Francisco in which he proposed an idea of the International Decade for Hazard Reduction. In 1992 during 10WCEE in Madrid IAEE made an important decision to establish the World Seismic Safety Initiative (WSSI) as its new undertaking to help implement the aims of IDNDR.

The first major effort of WSSI was to assess the status of earthquake mitigation policies and plans in the countries of the Asia Pacific Region. A workshop was held in February 1993 in Bangkok, Thailand, with 30 participants from 19 countries. Participants reported the state-of-the-art of earthquake disaster mitigation strategies in their home countries. They requested WSSI to help raise public and government awareness of earthquake risk in the decision-making sector. Towards this objective, WSSI has held eight High Level Meetings (HLM), held workshops, and technically assisted earthquake disaster mitigation projects in developing countries.

WSSI was incorporated in Singapore in May 1995 as a non-profit public benefit company under the title "World Seismic Safety Initiative, Ltd." and is operated by its international Board of 12 Directors.

The IDNDR Secretariat in 1996 evaluated WSSI as "Good project, quite successful in terms of small local projects with visible goals in developing countries." IAEE Ad Hoc Committee on WSSI reported in 1997 that the actions taken by WSSI during its first four years constitute a significant contribution to the mission of IAEE. The report of the Ninth Session of the IDNDR's Scientific and Technical Committee (1997) also commented WSSI as "One successful IDNDR demonstration project."

As IDNDR was almost coming to an end, the second Bangkok workshop was held in January 1999 to evaluate the effectiveness and impact of WSSI on IDNDR. It was truly encouraging to know that the activities of WSSI were highly appreciated by all of the participants. WSSI has decided to continue its activities beyond the year 2000.

HLM IN UGANDA

The President of Uganda personally attended the opening ceremony and delivered a keynote lecture during the High Level Meeting (HLM) held in Kampala, the capital city of Uganda, in December 1997. He urged the people of Uganda to increase earthquake awareness. He thanked WSSI for choosing Uganda as a venue for the eighth HLM and showed great interest in making Uganda a geographic focus for spreading the message of awareness and preparedness in Sub-Saharan Africa. He promised the government's commitment to provide increased resources.

In spite of all the efforts made during the IDNDR, very little attention has been paid to the needs and aspirations of the Sub-Saharan Africa countries. No one attends any regional or international conferences on earthquake

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engineering or seismology from this part of the world. The countries located along the Great African Rift Valley have been left out of the earthquake community of the world. The local hosts in Uganda were a University, the Ministry of Natural Resources, and the Ministry of Labor and Social Welfare. More than 300 participants attended the plenary session. The participants included the media, the diplomatic corps, the Red Cross of Uganda, leading civic and business leaders, the academic and scientific communities, and local practicing engineers. The HLM was managed by the local people. Three WSSI Directors and one resource person represented WSSI all with their own funds.

The HLM as usual consisted of 2 days. The program of the HLM in Kampala consisted of presentations on Day 1 and discussions and working sessions on Day 2. More than 200 participants were present for both days. Not only were the people of Uganda hungry of knowledge, they were also eager to share their knowledge and resources with all the neighboring nations. Following the HLM in Kampala, the Uganda Seismic Safety Association (USSA) was formed, and the country is in the process of becoming the 51st member country of IAEE.

HOW IAEE HAS BECOME INVOLVED WITH IDNDR

It was 16 years ago that we heard Frank Press' keynote address in San Francisco during the eighth World Conference on Earthquake Engineering (8WCEE) in which he proposed an idea of establishing the International Decade for Hazard Reduction. The UN decade which eventually became to be named IDNDR was originally called IDHR.

The International Association for Earthquake Engineering (IAEE) endorsed the idea and recommended its prompt implementation without realizing the difficulties it would encounter once the idea be materialized. During the four years following the 8WCEE, however, IAEE did not do almost anything. When earthquake engineers met again in Japan during the 9WCEE in 1988, I had been appointed as Secretary General of IAEE. People remembered that there was their brain child, now named IDNDR, to start in 1990 as an official UN project. IAEE, though its resolutions adopted in Kyoto, again urged Secretary General to take some actions to support this very worthy project, and established a small IDNDR committee.

IAEE is the only international academic organization in the field of earthquake engineering. It was established in 1963 to promote international cooperation among scientists and engineers with its Central Office in Japan. IAEE members are national or regional organizations, and as of August 1999, there are 50 members in the Association. It is very visible through the World Conference on Earthquake Engineering (WCEE) which is held every four years. However, its administration is not very organizational with no dues or assessments to member National Organizations of the Association. WCEE is organized by the sole responsibility of host country. Most of important businesses are managed through the General Assembly of Delegates and the Executive Committee Meeting during WCEE. For matters which require interim action, decision is taken by a postal ballot.

Creation of the IAEE's IDNDR committee turned out to be superficial, and it took three years to organize a small meeting in Tokyo in October 1991. The meeting was an occasion of harsh self examinations to IAEE. The resolutions of the meeting recommended IAEE to make any structural changes that will facilitate its ability to promote the earthquake engineering program for the Decade, and to prepare a working paper on the IAEE's role in the Decade so that discussions would be made during the 10WCEE scheduled in Madrid in 1992.

Based on the discussions and the recommendations made in a special session during the 10WCEE, IAEE made an important decision to establish the World Seismic Safety Initiative (WSSI) as a new undertaking of IAEE to help implement the aims of IDNDR. Following the decisions made in Madrid, the first meeting of WSSI was held in Tokyo in September 1993, which has eventually become to be called the first Board of Directors Meeting of WSSI. Since then, ten Board of Directors Meeting were held in Manila (February 1994), Vienna (September 1994), Singapore (March 1995), Nice (October 1995), Singapore (March 1996), Acapulco (June 1996), Stanford (April 1997), Singapore (June 1998), Seattle (May 1998), and Singapore (January 1999).

WSSI was incorporated in Singapore in May 1995 as a non-profit public benefit company under the title "World Seismic Safety Initiative, Ltd." Incorporation was necessary for liability and fund-raising reasons. The non-profit terms of incorporation are favorable to tax status. It should be emphasized that incorporating it in the US or Japan was found extremely difficult legally as well as economically. WSSI is presently operated by its international Board of 12 Directors who meet approximately twice a year.

THE 1993 BANGKOK WORKSHOP

The first major effort of WSSI was to assess the status of earthquake mitigation policies and plans in place in the countries of the Asia Pacific Region. This region historically had many earthquakes and extensive economic and human losses. The region in the most recent decade has been going through major urbanization and economic development. It was thought most appropriate that WSSI would compile a status of earthquake mitigation policies within this region.

There are many local and international aid bureaucracies promoting disaster risk reduction. In many cases, however, those who benefit are the people involved in the preparation and implementation of aid projects. People in decision-making positions do not understand the importance of problems associated with natural disasters. They do not work closely with nongovernmental organizations, but only with the national governments. Disaster management projects in developing countries are often based only on imported technology and methods developed in industrialized nations. If there is not a proper adaptation of this technology to meet the local conditions and needs, the implementation of such a project results in misallocation of investments. In developing countries, regional data is not available which is essential to make the imported methods effective. What developing countries need is not new technology but old well-tested technology that brings important benefits at low costs. Large, expensive projects with broad and general objectives only multiply an already growing bureaucracy and often result in a waste of time, money, and energy, rather than providing real solutions. It was thought better to establish small, realistic, well-focused projects that bring people from developed and developing nations to work together. Such small projects have better benefit-to-cost ratios than expensive programs.

With this goal in mind, WSSI organized a workshop on "Seismic Risk Management for the Countries of Asia Pacific Region" in February 1993, in Bangkok, Thailand. About 30 people attended from 19 countries. Participants from developing countries were invited with funds, but more than half of the participants attended the meeting with their own funds. The workshop was a great success and turned out to be a breakthrough for WSSI.

Participants reported on the state-of-the-art in earthquake engineering in their home countries. They commented on how the available knowledge is used or not used in developing earthquake disaster mitigation strategies. It was found that many countries are waiting to be addressed to do something, although their names are rarely heard in the international earthquake engineering community. Participants at the Bangkok workshop requested WSSI to help raise public and government awareness of earthquake risk in the decision-making sector, in particular. Towards this objective, WSSI recognized the importance of holding High Level Meeting (HLM) to be attended by government officials, business leaders, people from social and cultural institutions, as well as the mass media.

WSSI has so far held eight HMLs mostly in Asia. They were held in Kuala Lumpur (Malaysia), Singapore, Kathmandu (Nepal), Dhaka (Bangladesh), Colombo (Sri Lanka), Yangon (Myanmar), Hanoi (Vietnam), and Kampala (Uganda). We consider HLM as one of the most important programs of WSSI. It is a long-ranged educational process to help engineers and researchers in developing countries enhance their knowledge in earthquake engineering which does not expect short-term outcomes. Speakers financially support themselves to participate in an HLM.

WSSI'S ACTIVITIES OTHER THAN HLMS

In addition to the HLMs, WSSI hosted or cohosted numerous international or regional workshops and symposiums, and supported several projects related to earthquake disaster mitigation. To most of the following workshops and symposiums, WSSI provided funds varying between US\$ 500 and 5,000.

- Hyderabad (India) Training Course: Earthquake-Resistant Non-Engineered Buildings (March 1994)
- Hanoi (Vietnam) Workshop: Seismotectonics and Seismic Hazard in South East Asia (January 1994)
- Romanian Training Course on Earthquake Engineering (September 1994)
- Singapore Seminar: Catastrophic Risk Management for Insurance and Reinsurance Industry (May 1995)
- Romanian Project: Black Sea University Foundation Workshop on Disaster Prevention (September 1995)
- Kazakhstan Workshop: Central Asian Seismic Safety (October 1996),
- Bled (Slovenia) Workshop: International Workshop on Seismic Design Methodologies for the Next Generation of Codes (June 1997)

-Seeheim (Germany) Symposium: International Symposium on Seismic Risk in Megacities (December 1998)

The following four meetings and two Bangkok workshops were specifically organized by WSSI, and special funds were sought from the United Nations University (Tokyo) and several other organizations. Each of these meetings were supported by UNU with a fund of approximately US\$30,000.

- Okinawa (Japan) Workshop: Towards Natural Disaster Reduction (June 1993)
- Beijing Conference: Towards Harnessing the Communication Revolution (June 1995)
- Tokyo Conference: Urban Earthquake Risk Management (September 1995)
- Fiji Workshop: Opportunities for Disaster Reduction in Pacific Island Countries (September 1994)

There also were several projects technically assisted by WSSI, including the Indonesian Seismic Zoning Project, the Costa Rica Project on Engineering Impact of a M7.5 Earthquake in Nicoya Peninsula, Costa Rica, for which an international review board was established by WSSI, and the Global Risk Project by Chen Yong (China's State Seismological Bureau). WSSI donated US\$ 3,000 to the Secretariat of I1WCEE in Acapulco in 1996.

REVIEW OF WSSI BY IAEE

During the 1996 Acapulco WCEE, the IAEE's Executive Committee assigned an Ad Hoc Committee to review WSSI. The committee consisted of Luis Esteve, Takuji Kobori, and Joseph Penzien (Chair). The complete text of the review report is attached as an Appendix at the end of this paper.

The review is detailed with six items in its concluding remarks and includes a number of helpful and constructive suggestions. However, there are several discrepancies between the views in the report and those of WSSI regarding its fundamental concept. Whereas the Committee considers WSSI as an important suborganization of IAEE, our understanding is that WSSI is a new undertaking of IAEE. Although it is important to understand that WSSI exists because of IAEE and that WSSI is proud of working under the general objectives of IAEE, we cannot be a child forever. Children grow by respecting their parents.

Having been incorporated in Singapore as a non-profit public benefit company, WSSI is a legal entity. But it is a very poor public benefit company and most of the activities by the directors are performed by their own funds. We pay our traveling cost by ourselves to attend HLMs as well as Board Meetings. We feel, however, this is a little different from "contributions from individual Board members" as stated in Concluding Remark 4.

It is true that WSSI should develop a plan to establish an improved financial base for its activities. We have tried and are trying to raise funds. It always is one of the most important agenda items in the Board Meetings. We have realized how difficult it is to obtain donations from international organizations or private corporations. In addition, IAEE itself had no financial foundation expect for a donation from Japanese earthquake engineers to the activities of the Central Office.

We realize well that the actions of WSSI have been too concentrated in Southeast Asia and that the Directors are geographically not well distributed. The working principle of WSSI has been "Do something however small it may be." Instead of waiting for the days to come when "a more balanced distribution of activities" or "an improved financial base" is achieved, WSSI concentrates on establishing small, realistic, well-focused projects. This, we believe, is in accordance with the WSSI's motto: A Time for Action. Within the limited human and financial resources, the activities of WSSI may be regarded to have high cost-benefit performance. Although individuals bear their own expenses to attend an HLM, all of the local preparation are made by the people of the country where the HLM is held. It is not an easy task to gather several tens to hundreds people to a meeting of earthquake engineering from all over the country. Since 1993 when WSSI was established, IAEE has had 10 new members, of which five members joined IAEE because of the activities of WSSI. They are Pakistan, Thailand, Norway, Nepal, and Singapore. Uganda is presently under the process of becoming a member. One of the concluding remarks of the review paper reads, "Procedures for ensuring a fluid and continuous interaction between the IAEE Executive Committee and the WSSI Board of Directors should be defined jointly by both bodies." We continuously keep the IAEE President informed of all the planned as well as completed projects. President is always invited to the WSSI Board meetings. The announcements for all HLMs and other visible and major projects of WSSI are now routinely sent out to the IAEE Directors. We always remember that WSSI is an IAEE's undertaking in support of IDNDR.

As a senior member of the WSSI Board of Directors, I examine myself that we might have been a little too complacent with what we have done under the title of WSSI. With all difficulties considered, I have to admit that I mostly enjoyed working for WSSI. I believe that an undertaking such as WSSI can never be continued without some complacency and a certain amount of selfishness.

BANGKOK REVISITED

As IDNDR is almost coming to an end, it seemed appropriate for WSSI to reenact and reconvene the 1993 Bangkok workshop in 1999 and once again compile and record the achievements made by the countries which were involved in the 1993 study. Such a workshop was considered to provide a most crucial data on the achievements of IDNDR during more than five years since the 1993 workshop. The second Bangkok workshop on Seismic Risk Management for Countries of Asia-Pacific was held from January 18 to 20, 1999, to evaluate the effectiveness and impact of IDNDR programs towards earthquake disaster mitigation within countries of the Asia Pacific Region.

There were 37 participants from 21 countries. In addition to the 16 country reports from Australia, Bangladesh, Brunei, China, Indonesia, Iran, Myanmar, Philippines, Russia, Singapore, Thailand, Taiwan, Uganda, and Vietnam, progresses of several international projects in which WSSI directly or indirectly involved were reported.

There are very few objective ways to measure the effectiveness of IDNDR efforts in mitigating the impact of natural disasters. However, one could at least determine the introduction of plans and policies by a country to reduce the impacts of future earthquakes as a direct result of IDNDR programs. The second Bangkok workshop provided a unique and probably the only opportunity to collect this information. Status of policies, attitudes, and plans as they existed at the beginning of the decade was compared with the current plans, pollicies, and attitudes.

During the wrap-up session held on the last day of the workshop, participants were asked to self-evaluate the achievements made in their countries between 1993 and 1999. Results are summarized in the figure on the next page.

The figure shows a quantitative assessment of how various countries fared in terms of their Earthquake Disaster Preparedness Capacity (EDPC) during the 1993–1999 time horizon. If the EDPC levels is defined from 0 (no earthquake disaster preparedness capacity) to 10 (utopian perfection), it is much easier to go from 1 to 2 (100% improvement) than to go from 8 to 9 (12.5% improvement). It is unlikely and may not be justified for anyone to reach 10, because available resources are always limited. It is fully recognized that such an assessment can be subjective and open to criticism at best and outright discussible at worst. Nevertheless, changes of EDPC shown in the figure are extremely interesting and informative.

WSSI has decided to continue its activities beyond the year 2000. The way ahead is one of continuing innovation and experimentation, and both developed and developing nations should learn from each other in the new millennium where infrastructure development and disaster management need to match new demands as developing nations become more closely integrated into the global economy.

Changes of EDPC Status during 1993 – 1999 Time Horizon

	0	1	2	3	4	5	6	7	8	9	10	1999/1993
Brunei	●	→	○									‡
Fiji	●	→	○									‡
Uganda	●	○										2
Nepal	●	→	○									3
Australia	●	→	○									4
Singapore	●	→	○									2
Myanmar	●	→	○									2
Thailand	●	→	○									1.7
Philippines	●	→	○									2
Iran	●	→	○									2
Indonesia	●	→	○									1.25
Vietnam	●	→	○									1.5
India 1	●	→	○									1.5
India 2	●	→	○									1.5
Canada	●	→	○									1.2
China	●	→	○									1.4
Russia	●	→	○									1.6
Japan 1	●	→	○									1.2
Japan 2	○	←	●									0.88
USA 1	○	←	●									0.88
Japan 3									⊙			1
Japan 4	●	→	○									1.1
Japan 5	●	→	○									1.13
USA 2	●	→	○									1.13

[Appendix]
REVIEW OF
WORLD SEISMIC SAFETY INITIATIVE
AN UNDERTAKING OF
THE INTERNATIONAL ASSOCIATION OF EARTHQUAKE ENGINEERING
By
IAEE AD HOC COMMITTEE ON WSSI
Luis ESTEVA
Takuji KOBORI
Joseph PENZIEN, Chm.
Submitted to
EXECUTIVE COMMITTEE
INTERNATIONAL ASSOCIATION FOR EARTHQUAKE ENGINEERING
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Background

The World Seismic Safety Initiative (WSSI) was established by the International Association of Earthquake Engineering (IAEE) in 1992 as an undertaking in support of the United Nations' International Decade for Natural Hazard Reduction (IDNDR). Its goals and mode of operation are set forth in an official publication of IAEE entitled "A Time For Action: World Seismic Safety Initiative" dated January 1993.

The goals of WSSI have been to disseminate state-of-the-art earthquake engineering information throughout the world, to incorporate experience and research findings into recommended practices and codes in earthquake-prone countries, and to advance engineering knowledge through problem-focused research. With the objective of fulfilling these goals, WSSI has held high-level meetings in Singapore (Nov. 1993), Kuala Lumpur, Malaysia (Nov. 1993), Kathmandu, Nepal (Nov. 1993), Dhaka, Bangladesh (Dec. 1994), Colombo, Sri Lanka (Dec. 1994), Yangon, Myanmar (April 1996) and Hanoi, Vietnam (April 1996) prior to June 1996, which were intended to raise public and government awareness of earthquake risk in those countries. The meetings

were attended by government officials, business leaders, representatives of social and cultural institutions and mass media, and by technical and scientific leaders. During the same period, WSSI held workshop in Bangkok, Thailand (Feb. 1993), Okinawa, Japan (June 1993), Hanoi, Vietnam (Jan. 1994), Hyderabad, India (March 1994), Suva, Fiji (Sept. 1994), Vienna, Austria (Sept. 1994), Black Sea University, Romania (Sept. 1994 and Sept. 1995), Singapore (May 1995), Beijing, China (June 1995), and Tokyo, Japan (Sept. 1995), which were intended to be a catalyst toward earthquake hazard mitigation in those countries. In addition to these activities, WSSI has contributed to special projects, such as providing resources for revising the hazard map of Indonesia, assisting with the development and installation of seismographs in Singapore, and establishing GLO-DISNET on the internet. Since June 1996, WSSI has continued with activities similar to those describe above.

WSSI was incorporated in Singapore on May 11, 1995 as a non-profit public benefit company under the title World Seismic Safety Initiative Ltd. Incorporation was judged necessary by the senior board members of WSSI for liability and fund-raising reasons. Apparently liability is an issue with corporations donating funds to WSSI and the non-profit terms of incorporation are favorable to their tax status.

Charge to the AD HOC Committee

The members of IAEE Ad Hoc Committee on WSSI (Luis Esteva, Takuji Kobori and Joseph Penzien, Chm.) were appointed by Professor Sheldon Cherry, President of IAEE, on December 6, 1996 and the Committee was given the charge (1) to examine and consider the mandate of the WSSI, (2) to review the operation and accomplishments of the WSSI in relation to its mandate, over the four-year period ending 31 December 1996, and (3) to recommend to the IAEE Executive Committee whether or not IAEE involvement with the WSSI should continue and, as appropriate, to offer advice for consideration by IAEE. The Committee has received full documentation on the activities of WSSI from Dr. Tsuneo Katayama, Secretary General of IAEE, including minutes of the WSSI Board of Directors' meetings. A copy of MEMORANDUM AND ARTICLES OF ASSOCIATION OF WORLD SEISMIC SAFETY INITIATIVE, LTD, dated May 11, 1995 was received from Professor Cherry. The Ad Hoc Committee has reviewed all materials supplied to it, which provide a basis for the views and recommendations stated in this report.

Mandate of WSSI

The mandate of WSSI, as set forth in the IAEE publication "A Time For Action: World Seismic Safety Initiative" dated January 1993, is to disseminate state-of-the-art earthquake engineering information throughout the world, to incorporate experience and research findings into recommended practices and codes in earthquake-prone countries, and to advance engineering knowledge through problem-focused research. This mandate is fully consistent with Section 2-1 under Article 2 of the IAEE statutes which states "The objective of the Association is to promote international cooperation among scientists and engineers in the field of earthquake engineering through interchange of knowledge, ideas, and results of research and practical experience."

The Ad Hoc Committee considers the activities of WSSI to be different from and complimentary with the other activities of IAEE; thus, the Committee considers WSSI as an important suborganization of the IAEE which should continue in its role of contributing toward the common goals stated above, not only during the remainder of the IDNDR (1990 through 1999) but on into the next millennium.

Operation and Accomplishments of WSSI

As stated earlier in this report, the mode of operation of WSSI has been to hold high-level meetings with government officials in earthquake-prone countries to raise their awareness of seismic risk, to conduct workshops in these countries to serve as a catalyst toward earthquake hazard mitigation, and to contribute toward special projects related to seismic hazard mitigation. If the goals of WSSI are to be met, the holding of high-level meetings and workshop must eventually lead to appropriate follow-through actions by government officials and engineering professionals in the countries where they are held, leading to political and economic decisions such as the establishment and/or enforcement of adequate building codes and other seismic risk-reduction programs and the allocation of research funds to resolve related problems.

It is the opinion of the Ad Hoc Committee that a wide gap exists between the recommendations of experts expressed at the high-level meetings and workshops and the actual implementation of needed political and economic measures aimed at reducing seismic risk. The existence of this gap must be recognized when trying to assess the expected benefits of the WSSI program both in the immediate future and under a long-term perspective. Also, the difficulty in establishing indisputable cause-effect relations between WSSI actions and the ensuing actions of local communities and regulating agencies must be recognized. We believe that while the WSSI actions of holding high-level meetings and workshops are consistent with its mandate and have complied with the objective of disseminating state-of-the-art earthquake information throughout the world, they have been much less successful regarding the incorporation of experience and research findings into recommended practices and codes, and the advancement of knowledge through problem-focused research.

We feel that the lack of follow-through actions by government officials and engineering professionals following recommendations of WSSI is primarily due to lack of interest and determination. Should this be the case, more thought should be given to ways in which the high-level meetings are more successful in developing the desired attitudes towards seismic risk. If the problem is the lack of necessary resources to carry out implementation of improvements in building codes and engineering practice, WSSI should direct some effort toward obtaining the necessary technical and economic support through international organizations. A strong role by the administration of IAEE in this effort would likely be crucial to the success of this effort.

It is the opinion of the Ad Hoc Committee that any high-level meeting, workshop, or follow-through activity of WSSI in a particular country should be arranged in cooperation with and the encouragement of the IAEE member national organization of that country. If the country is not a member of IAEE, it should be encouraged to set up its own national organization and apply for membership. Further, we feel it highly desirable that the National Delegate to IAEE from each country participate directly in the planning of WSSI activities in his/her country and accept some level of responsibility for developing follow-through actions after any high-level meeting or workshop to the extent possible.

Administration of WSSI

A Board of Directors has ultimate responsibility for all WSSI activities, including obtaining financial resources. The original 11-member Board was approved by the IAEE Executive Committee at the 10th World Conference on Earthquake Engineering held in Madrid, July 1992, and its members were officially appointed by Dr. T. Paulay, President of IAEE, shortly thereafter. In the IAEE publication, "A Time For Action: World Seismic Safety Initiative," January 1993, it states "The IAEE Executive Committee will oversee (WSSI) Board Activities".

WSSI was incorporated as a non-profit company in Singapore on May 11, 1995 under the title World Seismic Safety Initiative Ltd. In its Articles of Association, it states that the Board shall appoint its own chairman, deputy chairman, and new members at the annual general meeting to be held once each year. Although IAEE is not mentioned in the Articles of Association, which may have been necessary for reasons of incorporation, the Ad Hoc Committee feels that the original close relationship between WSSI and its parent organization IAEE should be maintained. We therefore recommend that two members of the WSSI Board of Directors be approved by the IAEE Executive Committee with their official appointments being made by the IAEE President. Two members are recommended rather than one in order to increase the probability of having at least one of them at all WSSI general meetings. We caution against the temptation of designating these members on the basis of geographical-balance criteria or, other criteria which do not prioritize technical background, amplitude of vision, organizational expertise, and disposition to work. The two IAEE-appointed board members should keep the IAEE Executive Committee informed on the activities of WSSI.

Concluding Remarks

1. The actions taken by WSSI during its first four years are in accordance with the mandate it received from IAEE, and they constitute a significant contribution to the mission of the latter organization. Looking to the future, we feel that WSSI should focus its activities on education-oriented projects in cooperation with IAEE rather than on special projects, such as revising the seismic hazard map of Indonesia.
2. We note that the action of WSSI have been concentrated in Southeast Asia, and that very little has been done in other earthquake-prone regions of the world, such as in Latin America and the Middle East, where WSSI participation could also be beneficial. We recommend that WSSI achieve a more balanced distribution of its efforts among the regions and countries that would benefit most from them.
3. The experiences of WSSI over these years should be analyzed by its Board of Directors to assess the relation between the benefits expected at the outset and those actually obtained, and the reason for the possible differences, in particular when they imply less favorable results than originally expected, and to determine adjustments to the program that, hopefully, will lead to better cost-benefit performance. This analysis should be presented to the IAEE Executive Committee within the present calendar year.
4. A plan should be developed by WSSI for establishing an improved financial base for WSSI activities which would not rely significantly upon contributions from individual Board members, but rather upon the support of those governments involved in the activities, and upon donations from international organizations and private corporations. The direct involvement of IAEE is considered crucial to improving WSSI's financial base.
5. The Ad Hoc Committee feels that IAEE should continue its involvement with WSSI in accordance with the spirit of the publication "A Time For Action: World Seismic Safety Initiative" dated January 1993. Procedures for ensuring a fluid and continuous interaction between the IAEE Executive Committee and the WSSI Board of Directors should be defined jointly by both bodies soon after examination of this report.
6. The IAEE Executive Committee should consider the need for a second review of WSSI in approximately four years from the date of this first review.