

Working Party on Integrated Planning for Earthquake Preparedness – 1999/2000 Report



**NZSEE 2001
Conference**

David Brunson
Spencer Holmes Ltd

ABSTRACT: This report summarises the recent and current activities of the Society's Working Party on Integrated Planning For Earthquake Preparedness. The focus of the Working Party is on promoting the need for key organisations to be better prepared to respond following a major earthquake, and in particular highlighting the pre- and post-event roles of Society members. This work involves liaison with the Ministry for Emergency Management, the Earthquake Commission, the Building Officials' Institute of New Zealand and a range of territorial authorities.

1 INTRODUCTION

1.1 Background

The Working Party has continued to make progress in spreading the message about the need for key organisations to have specific plans to respond following a major earthquake – both in general terms for their organisations and in particular for pre-arranging access to engineers where critical community facilities and functions are involved.

This report summarises the areas where the Working Party is currently active in, including:

- Post-earthquake register of engineers and priority response agreements
- Urban search and rescue
- Post-disaster building safety procedures

In addition to meeting three to four times a year as a committee and working through project-based activities, the Working Party is represented on related committees convened by other organisations.

1.2 Working Party Members

The members of the Working Party are:

David Brunson (convener)	Spencer Holmes Ltd
Steve Jensen	Wellington Emergency Management Office
Andrew King	BRANZ
John Lucas	Insurance Council of New Zealand
David Middleton	EQC
John Norton	Ministry for Emergency Management
Kevin O'Kane	Ministry for Emergency Management
Richard Sharpe	Beca Carter Hollings and Ferner
Bruce Shephard	Seismic Consultants Limited
Euan Smith	Victoria University of Wellington
Rian van Schalkwyk	Wellington Regional Council Emergency Management

2 POST EARTHQUAKE REGISTER OF ENGINEERS AND PRIORITY RESPONSE AGREEMENTS

Recommendations regarding the development of a national register of engineers made in the June 1998 report to the Ministry for Emergency Management (as reprinted in the Bulletin (Brunsdon & Shephard, 1998)) have been progressed. Subsequent work has focused on implementation issues such as how the register would be used by the various different organisations that have need for a rapid engineering response to a major NZ earthquake.

This detailed consideration has led to the realisation that simply having a national register of engineers would only perpetuate the prevailing myth – namely, that key organisations would be able to get access to engineers “on the day”, and that further pre-event planning and preparation on this aspect would not be required.

Accordingly, emphasis has shifted over the past year towards encouraging the development of Priority Response Agreements – prior written agreements between critical facilities agencies and (for example) consulting engineers to carry out immediate post-event safety inspections. There are two principal objectives of such agreements, namely:

- Ensuring the availability of designated engineers who are familiar with those facilities; and
- Minimising their response time by defining in advance the specific actions they are to undertake.

Organisations that should have priority response agreements in place include emergency management agencies, critical facilities (hospitals, police, fire, ambulance) and utility and transportation network operators.

There is a range of issues that need to be considered in developing specific priority response agreements:

1. *The level of commitment*

- the numbers of people on call (eg. one, two or more)
- immediacy of contact (eg. pager, cell phone)

2. *Details of reporting and meeting arrangements*

- where and who to report to, and what actions to immediately undertake

3. *Terms of engagement*

- clarification of liability issues
- basis for pre- and post-event remuneration

The primary aspects to be addressed by a priority response agreement are indicated in Table 1 following. The level of robustness of an agreement (or urgency of response) depends on the level of commitment made by both the agency and the consulting engineer (with reference to the middle three columns). This will also influence the degree of formality of the agreement.

Table 1: Aspects to be addressed in a priority response agreement

Aspect	Level of Commitment/ Robustness			Comments
	High	Significant	Nominal	
1. Nature of required response	Automatic	Make contact first	Await call	Triggers must be defined for 'automatic'
2. Numbers of engineers formally committed	>2	2	1	Measure of redundancy
3. Rendezvous arrangements	Designated location and target time frame	Not specified	Not specified	
4. Initial Actions	Documented & practised	Documented	Not specified	
5. Prior familiarisation	Seismic performance assessment undertaken	Prior walk-through	Not undertaken	Need to know where construction drawings are located
6. Priority Actions				Agreed by management
Formality of Agreement	<i>Contract</i>	<i>Contract/ Memorandum of Understanding</i>	<i>Memorandum of Understanding (best endeavours)</i>	

Even for a priority response agreement involving only a relatively “nominal” level of commitment/robustness, the expectations and duties associated with each of these aspects should be defined. The process for an annual review of agreements including an update of contact details should also be specified.

An information document is being prepared to provide background to the need for priority response agreements and the aspects to be covered within a typical agreement. The intention is to circulate this document widely amongst the target organisations. An informal survey of major consulting engineering practices revealed that only very small numbers of priority response agreements are currently in place, and that these tended to involve commercial organisations.

A national register of engineers remains as a key supporting element to the implementation of priority response agreements. Initially, the register would be used as a resource for key agencies to identify engineers for such agreements. As the number of agreements in place

increases in a given region, the number of engineers available to be called up from the register for an event *in that region* would reduce. The national register would therefore ultimately function by making available additional engineers from outside the affected region. International engineers would also be included in the register.

Assistance will be sought from IPENZ and ACENZ in developing both the implementation plan for priority response agreements and the national register of engineers.

In addition to representing good risk management practice, the implementation of priority response agreements by critical facilities agencies will be an expectation under the National Emergency Management Strategy to be developed under the new emergency management arrangements.

3 URBAN SEARCH AND RESCUE

The Working Party, which includes the leaders from the Society's reconnaissance visits following the Turkey and Taiwan earthquakes in 1999, made strong representations to the Ministry for Emergency Management to establish at least a base capability for carrying out urban search and rescue (USAR) in New Zealand.

In July 2000, a joint Steering Committee for the Ministry for Emergency Management and the New Zealand Fire Service developed a project to establish a future strategy for USAR in New Zealand. The author was commissioned to manage this project and prepare a report, and was assisted by Bruce Shephard. This carried on from their work for the former Ministry of Civil Defence in 1998 under the auspices of the Working Party.

The report by the project Steering Committee entitled *Planning the Future of Urban Search and Rescue in New Zealand* was completed in November 2000. With regard to the current situation, the report concluded that:

- No single organisation currently has specific legislative responsibility for rescue following structural collapse
- There is limited and unevenly spread trained resources in each of the fundamental USAR capability categories. Moreover, and of greater concern, there is currently no management structure to either link these resource elements together or to integrate them within emergency management mechanisms
- There is a general community expectation that such arrangements are in place. The limited current capability is not able to meet these expectations across the range of foreseeable risk situations.

The project Steering Committee has proposed the following set of objectives for USAR in New Zealand:

To provide necessary resources and management structures to be able to:

- 1 *Carry out all rescue operations associated with a single-site structural collapse using New Zealand resources*
- 2 *Undertake all rescue operations at a multi-site structural collapse using New Zealand and international resources*
- 3 *Prioritise and undertake rescue operations in a regional scale disaster using New Zealand and international resources*

It is recommended that a national urban search and rescue capability be developed through a process of building on and integrating existing resources. The base elements around which the national capability would be developed are:

- Three **USAR units** as specifically trained and equipped rapid response as a national resource
- **USAR response teams** which comprise the national USAR units and specialist support resources with supporting skills from the affected region (with local trained resources present in every region).

It is further recommended that consideration be given to establishing a national USAR Advisory Committee. This group would comprise representatives from involved agencies such as NZFS, Ministry for Emergency Management, Ambulance, general rescue providers, etc.

For a major disaster, New Zealand is likely to be dependent on overseas teams to assist with the rescue process. There are basic provisions that New Zealand must put in place in order to manage and utilise these teams, and to be able to take advantage of the United Nations International Search and Rescue Advisory Group (INSARAG) support structures.

This report has been received by the Minister of Civil Defence and the NZ Fire Service Commission. The next stage of the project to develop a detailed implementation plan including costings is underway and scheduled for completion by the end of June 2001.

One of the many issues to be addressed in this implementation plan is the establishment of a sustainable process for training professional engineers to form part of the USAR response teams referred to above. One aspect being looked at is the deployment of construction-oriented engineers in conjunction with specialist earthquake engineers. This is in recognition of the practical experience of construction engineers and the on-site leadership role that they typically undertake on a day to day basis. Close liaison is being maintained with Australian engineers who are currently developing a training module in conjunction with the specialist USAR units there.

4 POST DISASTER BUILDING SAFETY ISSUES

The Working Party has continued to be represented on the Wellington Region Recovery Group, a forum of territorial authority officials from the Wellington region convened by the Earthquake Commission. The TA representatives include a mix of building consent officials and emergency management officers. Representation on this group also includes the Ministry for Emergency Management and the Insurance Council. The focus of this group is providing more information to territorial authorities regarding the necessary pre-event planning that they must undertake in order to be able to appropriately fulfill their post-disaster functions.

The principal output of the Wellington Region Recovery Group is a guideline document for all TAs covering building procedural matters after a major natural disaster. The purpose of this document, entitled *Post-Disaster Building Procedures: Guidelines for Territorial Authorities*, is to encourage TAs to adopt common standards and procedures, and to develop their pre-disaster planning. This document is currently being finalised, and is intended to be issued during 2001.

5 SUMMARY

Work will be continuing in each of the principal activity areas outlined above during 2001. The Working Party is the vehicle by which the Society's strategic direction *Promoting the need for a higher level of preparation to respond to major New Zealand earthquakes* is addressed.

6 ACKNOWLEDGEMENTS

The continuing contribution of the members of the Working Party and others from related committees is gratefully acknowledged.

REFERENCES:

Brunsdon D.R. and Shephard R.B. 1998. Post-earthquake response issues associated with compiling a register of engineers. *Bulletin of the New Zealand National Society for Earthquake Engineering* 31 (4) 281-287

4 RETURN TO INDEX

brunsdon working party report.doc