

New Zealand After Nuclear War

THE BACKGROUND PAPERS

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BACKGROUND PAPER
1 (A) LIKELIHOOD OF NUCLEAR WAR,
1 (B) STUDY ASSUMPTIONS

460

CONTENTS

- 1a. The Likelihood of Nuclear War; 1b Study Assumptions, by the Study Team
2. Impacts on New Zealand's climate and growing season, by A.B. Mullan and M.J. Salinger
3. Impacts on New Zealand's natural environment, by Bob Brockie
4. Meeting New Zealand's food needs, by Diane Hunt
5. Effects of electromagnetic pulse on power and communications, by Gerald Coates
6. Impacts on energy systems in New Zealand, by Jeanette Fitzsimons
7. Impacts on communications systems in New Zealand, by Judith Wright with contributions from John Tiffin and Harry Whale
8. Disruptions to transport systems in New Zealand, by Judith Wright
9. Radiation effects on the environment and people of New Zealand, by Peter Roberts
10. Impacts on health and the health care systems in New Zealand, by Phillipa Kitchin
11. Human responses to disaster - a review, by Neil Britton
12. The impact on New Zealand society, by Cathy Wylie
13. Impacts on New Zealand's urban systems, by David Haigh
14. Government agencies for control and recovery in New Zealand, by John Mitchell
15. Policy options and planning approaches for the New Zealand government, by a working party
16. Initial impacts on New Zealand's financial sector, by Peter Rankin with contributions from Paul Tompkinson
17. Initial disruptions to trade and employment in New Zealand, by Kevin Makin and Campbell Gillman
18. International migration to New Zealand, by Judith Wright
19. Implications for links with South Pacific countries, by Kevin Clark and David Small

BACKGROUND PAPER 14

GOVERNMENT AGENCIES FOR CONTROL AND RECOVERY IN NEW ZEALAND

by John Mitchell

*This is one of a set of background papers prepared, in consultation with the Nuclear Impacts Study Team, from material provided by a wide range of contributors for a study of the impacts on New Zealand of a major nuclear war. Along with other sources the papers comprised the basis of the book **New Zealand After Nuclear War**, by Wren Green, Tony Cairns and Judith Wright, published by the New Zealand Planning Council, 1987. The assumptions that the study was based on are explained in Background Paper 1, note particularly the assumption that New Zealand is not a target, and the variable assumption involving an electromagnetic pulse (EMP - for an explanation, see Background Paper 5).*

This paper reviews the information obtained, in early 1987, from representatives of government departments with responsibilities for maintaining law and order, defence policies, control of borders and passage of goods and people; and from departments and organisations concerned with rehabilitation, reconstruction and re-ordering of society to cope with long-term consequences of wide-spread disaster. Information was also obtained from other organisations with responsibilities overlapping those of the state sector agencies. The details contained here were correct at the time of writing, though restructuring of many government departments, and the creation of new corporations, has altered the areas of responsibility of some departments.

CURRENT SITUATION

The operation of departments involved with civilian control depends on the consent of a compliant public. Civil Defence also requires this but relies more on systems and procedures, as do all government departments and local bodies which have statutory responsibilities to contribute to disaster relief.

Staffing

Police are concerned about their current capacity to cover the annual increases in criminal offending. Police staff numbers in March 1986 totalled 5,203 (a ratio of one police officer to every 630 civilians). (This excludes the 1,000 MOT enforcement officers.) Canadian police/civilian ratio is 1:465, Australian police/civilian ratio is 1:457 (in 1987) and British police/civilian ratio was 1:397 (in 1983).

Police stated that theirs is the only department in which most personnel are given training and experience in dealing with emergencies and stress. In emergency operations, police strongly prefer not to rely on other agencies in carrying out what are civilian police duties.

Provision is made under the Civil Defence Act for the appointment of Civil Defence Police (analogous to the Special Constables appointed in the Napier earthquake of 1931). Civil Defence Police are normally drawn from among the residents of the affected area and tasks are assigned by the Police Operation Commander. Residents from outside the affected area may also be appointed as Civil Defence Police and

assume some policing duties, thereby freeing local regular police for temporary transfer to the disaster zone.

The **Customs Department** has approximately 1,000 staff, 480 of whom are engaged in border control duties; many staff in other divisions have worked in Border Control and could be transferred if required. (The target for 1989 is 930 staff although Border Control staff numbers will only be slightly affected.)

The **Department of Labour's** Immigration Division advises government on immigration issues, processes applications for entry to New Zealand, and monitors compliance with policy and statutes by visitors and migrants. Current staffing levels are 160: 80 in Wellington, 73 throughout New Zealand and 7 overseas.

The **Department of Justice** has over 4,500 permanent staff and 200 temporary staff. This includes people involved with court work (1,000) and prisons (1,400), where most staff are residential.

The **Ministry of Defence** staff total over 12,000 Regular Force personnel, 9,000 non-regular forces (Territorials, Reservists, etc) and 3,000 civilians of whom approximately 450 are casual employees. Defence staff includes people trained in administrative and logistics skills, engineering trades and medicine. In addition to reservist forces, Ministry of Defence respondents believed that many hundreds of past servicemen and women would be available for emergency service if called on.

The **Ministry of Transport** has staff totalling over 4,000, of whom nearly one thousand are enforcement staff for land transport. The Ministry provides staff at most major airports for Aviation Security Services. (The Airways Corporation has taken over the Ministry's previous responsibilities of Rescue Fire Services, Telecommunications and Air Traffic Control.) The Marine Division employs about 200 people in three sections: Nautical - search and rescue, safety, navigation issues and accreditation of masters and mates; Survey - safety of ships and accreditation of marine engineers; and Administration - recording of seetime and war service, maintenance of the register of New Zealand ships and the seamen's roster.

The **Ministry of Civil Defence** has a total staff of 34: 8 people in Head Office and a further 2 for the Wellington Zone, 7 in Auckland covering the Northern Zone, 8 in Palmerston North covering the Central Zone and 5 people in Christchurch covering the Southern Zone. There are also 4 instructors at the National Civil Defence School who conducted 2 special studies and 18 courses in 1985 (over 700 students attended, including regional and local government representatives and officers). A further 17 full-time and 15 part-time Civil Defence officers are employed by local bodies in the Auckland Zone, 11 (full-time) and 11 (part-time) in the Central Zone, 14 (full-time and 1 (part-time) in the Wellington Zone and 11 (full-time) and 17 (part-time) in the Southern Zone.

Every territorial local authority has an obligation to prepare a civil defence plan, to set up a civil defence organisation, and to appoint a Local Controller of Civil Defence for the purpose of dealing with a disaster in its district should the use of civil defence measures be warranted. Neighbouring territorial authorities may unite for civil defence purposes and then together they have an obligation to prepare a combined district civil defence plan, to set up a combined civil defence organisation, and to appoint a Controller of Civil Defence. At 31 December 1984 there were 127 local and combined district civil defence organisations (i.e. excluding regional organisations).

Every regional or united council has an obligation to prepare a civil defence plan, to appoint a Regional Controller of Civil Defence, and to set up the organisations necessary for dealing with a disaster in its region that is beyond the capability of any one particular local or combined district civil defence organisation. The Ministry appoints a Commissioner of Civil Defence for each civil defence region. Each commissioner is in charge of several civil defence regions, grouped for administrative convenience into the Northern, Central or Southern Civil Defence Zone. (NZ Year book 85/86.)

The **Department of Social Welfare** has over 6,000 Public Service employees of whom over 4,000 are Executive Clerical, 800 are Field Social Workers, 450 are Residential Social Workers, 400 are typists and 400 are other workers (in January 1987). The department reports high staff turnover, recruitment problems, increasing workloads and high stress.

Under its civil defence planning schemes, the Department of Social Welfare administers emergency welfare services in times of emergency or disaster.

Territorial Local Authorities. As well as the statutory requirements of every territorial local authority to carry out civil defence preparations many of their everyday activities involve social controls (i.e. building-codes inspection, sanitation and other health issues, animal controls and noise control).

Resources

This section selects those resources which commentators have identified as essential to the maintenance of their services.

Communications

Communications networks are indispensable to the effective and efficient provision of services. Telephone and computer systems are used by all agencies, while several also rely on other electronic connections. Office services are also dependent on electronic technology since there are few manual typewriters or gestetners available in government departments.

Departments involved with emergency services (e.g. Police) emphasise the vulnerability of their existing communications systems to serious overloading during civilian disasters. For example, the main switchboards of the National Police Headquarters were overloaded for more than 72 hours following the Mt Erebus disaster in 1981.

The Departments of Police, Transport and Justice rely on the Government Computing Service Centre at Wanganui for much of their work. For example, the Department of Justice's computer network extends to 67 courts, 7 penal institutions, 7 district probation offices and Head Office. The amount of computing in central government was noted by the Auditor-General in the 1980 survey *The use of computers in the Public Sector* (which covered 15 of the then 38 government departments). The following transactions were recorded:

Income Tax

- deduction certificates matched
- refunds
- returns lodged

Insurance policies

Law enforcement systems

Mortgages

Payroll

Property description/valuations

Road-user charges

Social Welfare benefits

State house records

Superannuation and National Provident Fund

Treasury accounting system

Vehicles ownership

Most departments, including Defence, Justice, Police and Foreign Affairs state that their electronic communications equipment is not hardened against an electromagnetic pulse (EMP) (see Background Paper 5). While some departments employ computer operators with "hardware skills" most do not, and in almost every case major breakdowns are serviced by the computer supply firms rather than "in-house" staff. Apart from Defence, most departments could not cope internally to rectify a major disruption to their communications or data processing services.

Transportation

Motor vehicles are as important as electronic systems for the effective functioning of departments.

Energy

The communication and transportation of government agencies relies on the main energy sources, electricity and fuel (although some, e.g. Defence, Police, the National Civil Defence Headquarters and the Government Computing Centre have back-up generators). Failure of electrical transmission is seen by the Police Department as providing conditions conducive to burglary, looting and vandalism, especially in urban residential and commercial areas.

6 million certificates p.a.
1.2 million payments p.a.
2 million return p.a.

2 million policy records

7 million enquiries p.a.

300,000 mortgage records

155,000 employees paid
fortnightly

1.2 million properties

0.5 million vehicles

1 million beneficiaries paid
fortnightly or four weekly.

60,000 rent records

260,000 accounts

3 million transactions p.a.

1.8 million records p.a.

Resources unique to agencies

This is not an exhaustive coverage of every agency, but describes resources which departmental representatives identified as important to their functioning or as being relevant to this study.

Department of Justice

Prisons: The Department of Justice administers New Zealand's 19 prisons, some of which (e.g. Mt Eden) have suffered serious overcrowding in recent years.

The provisions for "community care" sentencing in the Criminal Justice Act, 1985, were expected to reduce inmate numbers but have been offset by increases in reported crime, the number of convictions and the rate of remands in custody. Recent public outcry about violent offending has exacerbated this situation. The present capacity for New Zealand prisons is for approximately 2,880 prisoners, and the prisoner population totals are presently over-full and are likely to remain this way for the foreseeable future.

Paremoremo is an "electronic" prison which depends on a continuing supply of electricity for security doors and monitoring systems. An EMP would cause problems for staff safety and inmates' security. An internal assessment of Paremoremo's response to a major power failure is presently underway.

Courts: The Department of Justice administers the courts which could be community and communication centres in emergencies.

Patent Offices: Patent Offices are important repositories of information. Present staff numbers are 100 including 30 examiners (technical specialists).

Due Process: Frustration with many current features of due process in the courts, is shared by staff, Police, legal representatives and many accused. Due process is seen as too slow, and the backlog for some categories of offence is seen as a constant frustration.

The Customs Department

Office networks: Customs has offices at 13 major ports, and maintains a network of Coastal Watchers who report on the movements of shipping around the New Zealand coast. The coastline north of Auckland has many informal observers who report small craft traffic; for example, the second visit of the yacht *Ouvea* implicated in the *Rainbow Warrior* bombing was reported via this system.

Craft: Customs operates two craft; one is a launch based at Tauranga and the other is a "blue water" vessel at Auckland.

Responsibilities: Customs administers the rules for entry of people to and from New Zealand, and the passage of goods. In the event of a nuclear war, staff may be redeployed to border control duties, instructed to ignore much of the "passage of minor goods" function, and concentrate on searching for weapons, hard drugs, and checking for human, animal and plant diseases.

The Ministry of Defence

Defence resources include communication systems comprising mobile headquarters and field units, vehicles, engineering skills and other trades, equipment and materials, and mobile field hospitals, both within New Zealand and overseas. These resources are used in civil defence, search and rescue and other emergency operations, and as part of New Zealand's aid programmes.

The Ministry of Foreign Affairs

Through Foreign Affairs networks abroad, New Zealand receives information on rescue and rehabilitative actions needed in emergencies, on migration and on trade. Embassies at present provide contact points for New Zealanders living or touring abroad who require information or have problems requiring special advice or action.

Ministry of Transport

The Ministry of Transport provides the air traffic control system for New Zealand, a large portion of the Pacific and midway across the Tasman. Air traffic services are also responsible for search and rescue operations in New Zealand, searches for aircraft and major marine searches being controlled from rescue co-ordination centres located at Christchurch, Wellington and Auckland Airports. Marine Division services include the provision of aids to marine navigation, including beacons and lighthouses. Most lighthouses are automatic, being electronically controlled, and do not require a keeper.

Voluntary Welfare Agencies

These agencies, including Red Cross, Order of St John, and religious and community voluntary welfare agencies, would continue to be very important in New Zealand after a nuclear war. They already play a significant role in coping with natural disasters and emergencies.

There are 22,000 incorporated not-for-profit organisations in New Zealand, 2800 of which are registered with Inland Revenue Department as "Charitable". The voluntary agency sector is a significant area of employment in New Zealand. Harbridge & Edwards (1985) estimated that between 6,000 and 10,000 workers were employed by voluntary agencies. Some of these agencies such as YMCA, IHC, and Order of St John, are large employers in their own right. Others are smaller, some employing only one or two workers. Agency sources estimate that, in addition to this paid workforce, there is an unpaid workforce that could include as many as 50,000 volunteers.

At the 1986 Census, nearly 18 percent of the New Zealand resident population were undertaking some form of voluntary work on a regular basis. Of the total number of voluntary workers, over 68 percent spent between 1-4 hours per week while a further 18 percent recorded 5-9 hours per week. The remaining 14 percent undertook 10 or more hours of voluntary work per week, on average. (From Department of Statistics Information Release 86/250, January 1987.)

"A minimum of 1.75 million hours of voluntary work is undertaken each week, an average of 3 hours for the 580,000 volunteers, or 150 hours per year." (Dialogue 43:8). Voluntary welfare agencies' priorities after a nuclear war

would be to themselves, their families, their clients and finally to the wider community.

Planning

In New Zealand there are no existing contingency plans for dealing with the effects of nuclear war. Overseas, planning is well advanced, with most civil defence organisations providing assistance to the population during both war and peace-time.

Sweden, for example, while pursuing a national security policy of neutrality, has a national defence policy including military and civil defence (Ball and Langtry, 1983). The construction of shelters is a principal element; six million air-filtered shelter spaces exist, offering protection from radiation following nuclear blasts. The Swiss civil defence programme has many similar elements (Piroué, 1982); both emphasise fire-fighting and other procedures for protecting essential industries, rescue of trapped people, care of the injured, homeless and migrants and for decontamination of people, equipment and supplies.

Most Warsaw Pact countries emphasise civil defence as part of war-time contingency plans. This takes the form of military or para-military civil defence units, early warning and alert systems, military defences to protect civilian populations, medical aid, rescue, evacuation and re-settlement. Training of civilians is common, and substitutes for military service in some countries.

NATO countries vary widely in their extent of preparedness for war-time civil defence, ranging from sophisticated early warning and alarm systems, radiation monitoring and public shelters (Denmark and Netherlands) to relatively informal situations making little preparation for post-war survival of civilian populations (Luxembourg). (Shaw et al., 1982.)

The UK "Home Defence Plans" have been severely criticised (Campbell, 1982) as maximising civilian casualties through policies of no evacuation and no shelters, other than those constructed privately, or limited space with few amenities in existing underground facilities such as railways and mines. In contrast, shelters for the protection of government officials are very elaborate. The UK plans are described as: "... authorities perceiving their own populations as the enemy". Known pacifist groups are identified (in these plans) as requiring particular attention.

In the USA, civil defence is coordinated by the Federal Emergency Management Agency, established in 1979. In 1980 Congress favoured the option of evacuating major urban centres as its main post-nuclear war strategy. More recently, considerable community and political pressures have emerged for better direct protection of the civilian population.

Soviet civil defence planning is plagued by many of the same problems besetting Western civil defence planners, including inadequate funding, resistance to training and civil defence duties by bureaucrats and managers, and a complacent populace, many of whom manage to avoid the "compulsory" participation.

Although Australian civil defence exists within a defence environment, there have been misgivings expressed about its concentration on a peace-time role, and an apparent low priority of planning for disasters consequent upon military

activities. Their position is described thus:

"...the core civil defence structure....serves as a sound basis for development as and when necessary as a wartime civil defence management infrastructure..." (Air Vice Marshall John Lessels, 1986).

The New Zealand civil defence organisation

The New Zealand guide-book, "Civil Defence: Government Action in a Major Disaster" states:

".... because a warlike threat is considered unlikely, priority is given to the measures necessary to meet natural disasters. The plan relates therefore to civil defence emergencies whether natural or man-made, although in a national emergency the basic civil defence concept and organisation would remain unchanged".

This publication and its accompanying sector plans are currently under review and a draft revision was discussed at a seminar in March 1987. However, as it stands at present, both it and the Civil Defence Act 1983 detail the statutory obligations of state agencies, territorial local authorities, and roles of other community organisations.

At a national level, government overview of civil defence resides with a Cabinet Sub-committee of Civil Defence and a Minister of Civil Defence. National administration and logistics are organised through the Secretary for Civil Defence and the Director of Civil Defence who heads the service. A National Civil Defence Committee exists, comprising the Secretary and Director, the permanent heads of at least 15 state agencies, and others as may be appointed from time to time by the Minister; this committee meets once per year, and advises and assists the Minister and Directorate. An Executive Committee of 6-8 members meets more frequently.

If there was a nuclear war, then a National Emergency would probably be declared by the Governor-General or Executive Council. Following this proclamation the Cabinet sub-committee would appoint an Officials Committee from the National Civil Defence Committee to act as an Operations Group and to make urgent decisions on behalf of government. A sub-committee of the National Civil Defence Committee, the Committee for Reconstruction, Restoration and Rehabilitation would also be appointed. A Commissioner for Disaster Recovery might be appointed under the Local Government Act (as was done in Napier in 1931 following the earthquakes), and under the Civil Defence Act 1983 a Disaster Recovery Coordinator might be appointed (as was done in Invercargill in 1984, Gisborne in 1985, and in Timaru in 1986, after the flood disasters, and in the Bay of Plenty following the March 1987 earthquakes). A Disaster Recovery Coordinator is responsible to the Secretary and Director of Civil Defence for administrative purposes, and to the regional Commissioner of Civil Defence for operational/logistics matters.

The review study of civil defence held in March 1987 discussed various issues implicit in the above paragraphs.

Under the Civil Defence Act, the proclamation of a National Emergency confers on several agencies (Police, Civil Defence and others) powers which are not normally available.

Civil defence training and exercises

Most civil defence training for representatives of the community at large takes place through the regular meetings of the Sector Wardens - groups of volunteers with responsibility for a local area. Exercises co-ordinated at a district level are also held at which the groups of sector wardens interact with each other and with the local authority civil defence leaders and personnel from various state, local body and voluntary agencies. Because of the considerable expense of a major exercise, these are held less frequently. The most recent was the "Ru Whenua" exercise, May 1987, which examined the impacts of a severe earthquake near Wellington city.

Recovery after nuclear war seems to be excluded from Civil Defence planning; "the only detailed plan to deal with any possible major effect of a nuclear war" (E. Latter, 1985) appears to be Auckland Civil Defence organisation's plan to decontaminate irradiated water supplies. (See Background Paper 13.)

A report by Parliament's Foreign Affairs and Defence Select Committee examines many of the arguments surrounding a nuclear war and its consequences. The report was

"... cautious about making any concrete recommendation for civil defence at this stage. It would be unfortunate if large-scale civil defence effort were to lead to a false sense of security in the community. On the other hand, a greater appreciation of the limits of civil defence and emergency provision when dealing with the aftermath of a nuclear war may have the desirable effect of further strengthening public and thus government resolve to work for effective disarmament."

Responsibilities of other departments

Sections 43 to 45 of the Civil Defence Act 1983 describe the statutory obligations of departments, organisations and public bodies. The local civil defence plans of territorial authorities must be submitted for approval to the regional or united council of which it is a constituent authority; procedures for amendment, appeal, review and public inspection are set out in the Act. However, other agencies do not appear to be required to submit their plans for approval, and it is feared that many would not be effective in the event of an actual emergency of grave proportions.

Another area where policies have yet to catch up with recent developments is the responsibility for meeting civil defence commitments of the newly-formed state-owned enterprises, which are taking over functions previously assumed by government departments. Previously, costs incurred by departments in dealing with disasters were met by the agencies involved. Furthermore, some departments, such as the Ministry of Works and Development, kept resources for disaster action in district locations where the needs were frequent - e.g. deep-water, high-volume pumping equipment in Westland. Now, under current "rationalising" and restructuring, a policy of greater centralisation of stores may be adopted, and, in the face of demands of a user-pays strategy, some new corporations may feel no obligation at all to carry such little-used equipment. The extent of the autonomy to be granted, and the cost-support of services in emergencies, has not yet been covered by policy for many of the new agencies being created. The Civil Defence Act 1983 mentions "departments", but does not specify corporations (other than

Railways and Broadcasting as members of the National Civil Defence Committee) as having responsibilities; whether "organisations" embraces corporations is not clear. The question of costs is not mentioned for state agencies.

However, most state agencies have developed contingency plans to cover major disruptions to normal services. For many departments, planning includes the appointment of a Head Office director or supervisor of emergency planning, and regional and sometimes district offices make similar appointments, or at least have a staff member share that portfolio with other duties. For example, the Department of Social Welfare has procedures well established to ensure that emergency benefits and reimbursements for expenses (e.g. host's billeting costs) are paid promptly in a local emergency. The Department of Social Welfare also has alternative systems established for manual payments of ordinary benefits in the event of local electronic fund transfer systems failing temporarily. However, a long-term and widespread dislocation or rapid and huge increases in unemployment would cause chaos.

No department reported having prepared contingency plans to deal specifically with the consequences of nuclear war. The following reasons were given for departments not initiating, or being discouraged from initiating such planning:

- a perceived low probability of occurrence;
- the cost of implementing many of the planning recommendations;
- uncertainty over the extent of likely impacts (e.g. climatic or EMP effects);
- staffing restrictions;
- avoidance of "self-fulfilling prophecies."

The movements of people across our borders could affect the roles of several social control and other agencies, including Customs, Defence, Police, Labour's Immigration Division, Internal Affairs' Citizenship and Passports offices, Foreign Affairs, Health, and Agriculture and Fisheries.

Rehabilitation and recovery

The Earthquake and War Damage Commission

War damage is excluded from the general policies providing insurance cover on properties. Instead, cover for such contingencies is provided by the Earthquake and War Damage Commission, subject to the following conditions and exclusions:

- i. Cover is provided only for property damage.
- ii. Cover is restricted to properties which have been insured with a New Zealand-registered insurance company.
- iii. Cover is restricted to properties for which the insurance policy includes a fire cover.

- iv. Consequential losses are not covered; examples are loss of trade, damage by civilian migrants trying to get ashore, etc.
- v. Rioting is not covered.

Established through the Earthquake and War Damage Act 1944, the Commission has had to meet only 2 claims for war damage. The Commission's funds, which are backed by Government, currently total \$1,400 million.

The insurance position for public buildings is currently being reviewed by Treasury. Until recently, many government buildings were not insured, the rationale being that the owner, the state, covers itself for their replacement following a disaster. However, recent policies have demanded a re-examination of the insurance positions of many departments, especially those which generate income. The position of state-owned enterprises is much clearer. Air New Zealand and the Railways Corporation have had to obtain commercial insurance, and the newly-created state-owned enterprises (Forestry Corporation, New Zealand Post, Telecom, etc) have recently been negotiating commercial insurance cover. Therefore it is likely that many public buildings will soon be insured with commercial insurers, and that as a consequence, the income and commitments of the Earthquake and War Damage Commission will also increase.

The Earthquake and War Damage Commission is ex-officio a member of the National Committee of Reconstruction, Restoration and Rehabilitation. It was a contributor to the compilation of "The Emergency Service Insurance Plan", discussed in the next section.

"The Insurance Emergency Service Plan"

The Insurance Council of New Zealand has developed "The Insurance Emergency Service Plan" to provide "... an insurance industry response to a disaster situation". The plan's 5 main functions in the event of a disaster are:

- i. to coordinate the industry's response...
- ii. to advise and assist insured persons...
- iii. to establish contacts with...other agencies...and represent the insurance industry on emergency committees.
- iv. to ensure information flows quickly and accurately...
- v. to demonstrate to the public the industry's preparedness and concern...

The plan defines operational regions, national, regional and area emergency committee memberships, contents of "Insurance Emergency Packs", operational procedures, checklists of equipment and actions to be carried out, emergency claim forms and insurers' checklists, recommended formats and drafts of wording of press releases for several types of emergency, advice sheets to householders including information about claiming procedures, how to minimise damage and loss, and how to restore homes and chattels.

Most shops purchase riot insurance, but in recent incidents, such as the Aotea

Square riots in December, 1984, this was shown to be seriously inadequate for most premises damaged.

Off-shore insurance - uninsured?

Many of the larger private firms in New Zealand are owned by Northern Hemisphere interests, and consequently most of their assets in New Zealand are insured with overseas insurance companies. Also, many New Zealand-owned firms have also chosen off-shore insurance, for various reasons of competitiveness of premiums, or as part of business arrangements. These firms, therefore, do not come under the "umbrella" of the Earthquake and War Damages Commission, and therefore would have no cover within the terms of that organisation's services. The extent of overseas insurance is not known, but the value of properties so insured is estimated to be very large.

Most of New Zealand's insurance companies have "re-insured" themselves by investing significant proportions of their assets in overseas banks, other financial institutions, insurance companies, manufacturing and other ventures. At any one time, only a modest proportion of an insurance company's total assets is readily available "on call" in New Zealand for the cash settlement of claims.

Stockpiling

None of the departments discussed reported having significant stocks of surplus or back-up equipment available to replace a major failure of existing electronic systems. A failure of district or regional transmitting and receiving posts through a power black-out could be countered reasonably quickly by temporary means such as emergency generators (if they were unaffected by EMP), provided the electronic system was not itself damaged. Some emergency equipment is held by a couple of departments for local rescue and recovery operations, but a wide-spread and long-term loss of essential equipment and/or energy sources could not be countered by existing resources on hand.

None of the departments have spare equipment stored in such a way as to be shielded against an EMP. Even Defence, under its "Project Pataka" planning (see next section), confines its stockpiling mainly to consumable resources rather than duplication of operational systems. The annual report of the Ministry of Defence describes (p. 38) the additional allocation in May 1985 of \$16m to establish reserve stocks for the Armed Services. \$14.82m was spent by 31 March 1986; of this amount 30% was "... allocated, in the main, to electronic and mechanical items with the emphasis on major assemblies to improve repair pool holdings". For example the 3rd Task Force holds 43 portable generators, from 62.5KVA to .5 KVA output, one of which would be required by The National Radiation Laboratory to power analysis equipment after a nuclear war.)

Most civilian agencies of state have no maintenance and repair divisions of their own. The inherent obsolescence of electronic equipment is a factor precluding large investments in models which could soon be superseded by continuing developments.

Many electro-mechanical, non-electronic systems have been replaced recently or are

currently being replaced; some of these "obsolete" systems are more resistant than modern electronic components, such as silicon chips, to high energy impulses. In some instances, not only has the older equipment been removed and disposed of, but the construction details, operating instructions and maintenance have been destroyed also.

The Ministry of Defence seems to be unique in that it is the only department pursuing a policy of stockpiling significant quantities of essential items of a consumable nature. As mentioned above, Project Pataka has permitted the purchase of reserves, and 70% of the \$14.82m spent in 1985/86 provided

"... for a wide range of ammunition items for all three Services."

Defence also has significant stockpiles of liquid fuel supplies in its various bunkers, although the levels of these fluctuate with changes in policy.

LIKELY IMPACTS OF A NUCLEAR WAR

In addition to reviewing the impacts on departments it is also useful to extract predictions about the reactions of individuals and groups, and ways in which government could structure itself to cope.

Individual reactions

Senior Departmental officials predicted widespread shock, fear, anxiety, grief and numbness after a nuclear war. Most believe that initially these psychological impacts would serve to bind together groups within the community and the wider society, thereby creating a short "breathing space". However, this would be very short-lived and an immediate and urgent need would exist for *accurate* information, answers and advice from *credible* sources. If this was not forthcoming within hours, there would be, at best, "flak" directed at government, police and other representatives of authority and, at worst, widespread lawlessness. Recent examples of spontaneous lawlessness and riotous behaviour were cited, by those interviewed, including the Aotea Square riots of December 1985, and the Springbok tour incident of 1981. In early 1986 the Police formally objected to proposals to turn off urban street lighting to permit clearer viewing of Halley's Comet; they feared widespread looting, burglary and vandalism. Incidents during a power cut in the Auckland region on the night of 6th February 1987 rose ten-fold to 23 such crimes.

An EMP would exacerbate all of the adverse psychological reactions. The loss of communications and the failure of home appliances would intensify people's worries and may rapidly precipitate counter-productive behaviour by very large numbers of citizens (including anti-social and criminal acts).

While most did not consider the adverse weather impacts in detail, a few saw that this would compound the difficulties predicted above.

Societal patterns of response

Three commentators predicted that most citizens would continue with their normal routines and cited accounts of the Black Death which numbed many individuals and

groups into a mechanistic habitual response pattern. In that crisis many people continued with behaviours which were no longer appropriate or relevant to the changed circumstances, e.g. trying to pay rents to landlords who had died. Others continued to deliver food to homes which were no longer occupied, despite the goods piling up and rotting at the door.

The (perceived) cohesiveness of New Zealand society during the 1939-45 war was cited as a precedent which indicated to respondents the ability of New Zealanders to endure prolonged sacrifice and hardship. The persistence with routines in the face of disrupting circumstances, and sometimes extreme danger, was also commented on - the events of the Wahine Storm were recalled, when many workers, despite the risks to themselves, attempted to get to work, overloading city services and causing inconvenience to the maintenance and rescue operations going on at the time.

Opposing these views were those of the majority who felt that nuclear war would be much worse. The 1939-45 war was perceived as having an eventual end, morale was remembered as having been high, sustained by information which, despite its propaganda bias, helped maintain optimism. After a nuclear war, the lack of an "enemy" against which the nation could mobilise its resources was seen as a threat to the maintenance of our social integrity. However, comparisons between the 1939-45 war and a future nuclear war are contentious and likely to be erroneous.

The civilian disasters cited (Wahine, etc) are not viewed as having comparable impacts beyond the first few hours. The consensus was that wide-spread social dislocation would occur unless constructive and purposeful tasks could be created for the "newly unemployed", and that full and accurate information was promptly circulated and frequently up-dated. It was thought that citizens would need convincing that they, their families and homes were safe, that the environment was safe or could be made safe, and that any threats to our sovereignty could be dealt with.

Unemployment is seen as a major contributor to the present high crime rates. Widespread job losses, combined with the other pressures mentioned, would exacerbate the problem.

Impacts on departmental operations

The issues of staffing, communications and transport are of common concern to all agencies studied and these are discussed in this section. The opinions summarised are not necessarily those of the particular departmental official, but represent the shared views of several officials who are very familiar with many of the statutory obligations and operational routines of each other's departments. For example, several commented on police staffing levels and rising crime rates and several expressed concern about due process.

Impacts on staffing

The staffing situations in all departments studied would be affected, but the extent of impact would be compounded by the added complication of an EMP. While most agencies feel they would be seriously under-staffed, a small number did not mention staffing as a potentially serious issue. Redundancies would seem inevitable in some divisions, whereas shortages of personnel would be anticipated

elsewhere; the effects may counteract each other within some departments if the skills and training of one division were applicable to another.

No department envisaged mass defections by its staff, although several commentators acknowledged the dilemma of deciding between obligations to family, home, community and work. Several officials questioned whether coming to work would be advisable for the first few days, especially for those in non-essential services; they felt there may be lower individual and communal stress if leave was granted so that people could attend to their family and domestic concerns, and to community matters.

Police would feel very vulnerable. Escalating crime rates under current conditions are stretching police resources already. Widespread non-compliance with the law could not be handled by present staffing available. They feel that a much more visible presence would be needed on the streets, for which more staff would be required. Increases of any significance in the numbers of arrested persons would pose additional problems for police if the present demands of due process were to be met. The ratio of one police officer to 630 civilians would make it difficult, if not impossible, to maintain control without civilian cooperation.

Due process was also mentioned by representatives of the Department of Justice as an area of activity for which staffing demands would depend on legislative changes. If the decision was made to suspend due process in favour of local summary procedures for dealing with petty crime, then up to 1,000 court staff could be superfluous or available for allocation to other duties. Alternatively, should there be widespread arrests, to be processed in the normal way, then courts will be seriously under-staffed. Problems of due process in the wake of mass unrest were mentioned by others including the Crown Law Office and Customs Department.

The Justice Department would anticipate redundancies in several of its divisions such as the Community Affairs Registry and Land Transfer, although a skeleton staff would be kept to maintain master records. Any increases in prisoner populations would require the dual response of increasing prison accommodation plus the recruitment of the staff required to supervise them.

The Customs Department could not cope with large numbers of migrants or refugees arriving simultaneously. The geographical location of Customs staff and personnel numbers would also require rapid review; re-allocation of staff to more remote communities might be required. The Coastal Watch volunteer service would need to be encouraged and enhanced by closer contacts with departmental staff. During World War II, "farmers were aware of their open lonely coasts... the urge to defend them was strong and they felt they must come forward to join the Home Guard" (Taylor N., 1986, p. 456).

The Ministry of Foreign Affairs did not mention staffing levels as a serious concern but they anticipated demands from surviving New Zealanders abroad attempting to find out about New Zealand conditions, and questioning how they could get home. The reality of meeting such requests remains a matter for speculation since over three-quarters of the Ministry's staff are in cities likely to be targeted in a major nuclear war.

The Department of Social Welfare anticipates massive staff problems in most of its divisions. Benefit payments via its emergency manual system to those on the current registers could not be maintained by present staff levels. A very large

increase in trained personnel would be required just to maintain present operations. The large increases in numbers of beneficiaries anticipated through unemployment and medical problems would exacerbate this problem. The above assumes government is able to meet such payments and this would depend on a continued tax take which would be substantially reduced by the loss of export markets.

The Department of Labour envisages that major staffing difficulties would be experienced in its Employment and Training Division. If the retraining of New Zealanders and/or refugees was required for changed primary production patterns or more manual machinery, then workloads for Department of Labour staff would be enormous. Immigration Division staff levels are hard to predict; a "tight" policy applied to large numbers of refugees would severely stretch current staff resources.

Impacts of communications systems failures

Every agency's operations is totally dependent on mains electricity and one or more electronic communications and data processing systems. Every agency approached emphasised their vulnerability to an EMP. Even the Ministry of Defence "have no specific programme to acquire, modify or install equipment designed to provide protection against EMP (D.B.G. McLean, pers. comm. to Mr Peter Wills, SANA, 12/12/86).

The impacts of electronic systems being rendered inoperable would be extremely wide-ranging, and the interactive effects of related problems would quickly escalate to a situation where centralised monitoring and control could become impossible. Several departments would be seeking and expecting to obtain information about overseas events. Their own operations would demand accurate information from abroad and there would be enormous pressure from anxious citizens trying to locate family members. Foreign nationals in New Zealand would be equally desperate for knowledge of their home/homeland. Conversely, there would be an urgent concern that New Zealand be able to communicate its own position to its overseas stations. The above assumes EMP or anti-satellite devices had not rendered present international communication systems permanently inoperable.

Loss of electronic communications within New Zealand would have a devastating impact on every agency's current operating routines. Inability to communicate between fixed and mobile stations would render many administrative and logistical functions impossible. The allocation of staff and resources would have to revert to a manual mode of operation.

Given the indispensable role of electronic systems in their operational routines, every departmental representative believed that their agency would have a very high priority claim on available expertise to restore their system first.

Some departments anticipate serious communications problems even if there was no EMP. The scenario without EMP is seen as posing enormous difficulties for communications systems as they operate at present. The Mt Erebus disaster resulted in the clogging of police switchboards for several days. The individual and social impacts of a nuclear war would be felt by all citizens, and the numbers seeking information about relatives would be in the hundreds of thousands. It is likely that severe overloads would occur on all telephone circuits if call numbers increased by 20-25%.

Transport

Transport problems would derive from two impacts - the direct effects of an EMP, and a consequential impact of fuel shortages. The EMP effect is more likely to damage the electrical systems of more modern vehicles, especially those (5-10% - mostly new cars) which rely on "chip" technology for ignition control.

Most commentators presume that rationing policies would ensure that essential social control and emergency services would be maintained, but departments providing non-essential services anticipate restrictions in their field mobility. This assumes a stable government with the ability to communicate, requisition and control supplies of fuel and spare parts.

If modern vehicle fleets became inoperative it is expected that emergency regulations would permit the commandeering of vehicles unaffected by EMP; this action may add to the anxiety and resentment of citizens so affected.

POSSIBLE OR LIKELY POST-WAR ADJUSTMENTS

This section summarises the adjustments that government departments believe they might make after a nuclear war.

Police

Staff numbers would probably be increased to enable more officers to undertake street patrols. The rapid recruitment required would highlight a number of administrative and logistical problems if suitable personnel were not readily available. First preference would be to recruit retired police. Such recruits offer maximum flexibility for Police Department planning because, depending on their fitness and health, they can be assigned to most police duties with a minimum of training. Civil Defence Police could be appointed, as explained earlier, to relieve regular officers of administrative duties, and with rapid training they and raw recruits could be assigned to some patrolling duties.

Laws dealing with mass disorder might be redrafted so that semi-trained recruits could operate effectively and with consistency. Police might seek emergency powers, e.g. detention without charge or trial.

The importance of up-to-date and accurate information is acknowledged by the police. They recognize that they "can't control the media but hope that responsible reporting could prevail".

Justice Department

Justice Department does not anticipate the release of certain categories of prisoner, and would continue to provide food, shelter and care to prisoners. There might have to be an expansion of prison space and increases in staff numbers to cope with increased offending. There may be considerable public resentment if scarce food was allocated to prisoners and rationed fuel was used to transport provisions to prisons in a situation where the community at large was at subsistence level and private vehicle use had been severely curtailed.

Many aspects of due process are likely to be suspended and up to 1,000 court staff might be assigned to other duties. These people are experienced in public service procedures, and could be redeployed to other administrative duties, if they were willing, with little re-training.

The Patent Offices are also regarded as a most important asset and may have their staff expanded to research files for old technologies which could become important again. The records contain ideas, details of equipment design, and information about various manufacturing processes, including the synthesis of some pharmaceuticals.

Defence

New Zealand has close ties with Australia and the South Pacific and these could be strengthened in the interests of mutual recovery and defence. The Ministry of Defence could have an important role in strengthening these ties and may, where possible, deploy units for defence liaison with overseas countries.

Defence would be required to mobilise its resources for the restoration of New Zealand, the South Pacific and Australia, especially if Australian bases and cities were bombed. Defence's transport services, construction equipment, medical and rescue units (including those trained in radiation procedures) and its administrative and logistics skills would be deployed for civilian rehabilitation and military operations.

Customs

Commentators anticipate that some activities of Customs would "... become largely academic" whereas others would expand. The passage of goods across our borders would have stopped with the end of normal patterns of overseas travel. Passengers that enter through established ports of entry would probably have few restrictions placed on their personal goods provided they are not carrying hard drugs, weapons or diseased plant and animal tissue likely to jeopardise our horticultural and agricultural industries. The health of the passengers will also be a serious concern, and close liaison with Health Department personnel at check-points would be anticipated.

Limits on personal baggage weights imposed by carriers (if they were still operating) would be more likely to restrict the minor goods passing through Customs than strict impositions at the points of entry.

The early redeployment of staff to border control duties in more isolated northern communities (anticipated by those interviewed) might become a permanent feature of departmental operations, and several officers might be on hand in each local area should there be an influx of small boats and larger vessels from stricken areas overseas.

Social Welfare

The Department of Social Welfare anticipates there would be enormous difficulties in establishing a nation-wide manually-administered benefits system on a cash/cheques payment basis. It is doubted whether the staff required could be recruited to deal with the complexities and volumes of the work. In any event many

doubt whether society would be able to retain a cash basis for its financial transactions, and a much simplified voucher system is seen as more likely to take the place of the Department's current methods of payments (if payments continued).

Department of Labour

The Department's Employment and Training Division believe present staff levels to be hopelessly inadequate to deal with the massive re-training which would be required after a nuclear war. The impact of lost jobs and migrants seeking work would overwhelm the resources of this division; if it were to have a contribution to make to the reconstruction of New Zealand, its staff resources would need to be reinforced. (Estimates of 1.3 million unemployed, G.F. Preddy et al 1982, and by Jackman and Wheeler, SANA, 1986, of 50-70% unemployed in the Manawatu, highlight the problem).

Civil Defence

If centralised government was difficult to sustain due to communication and other problems, then local administrations, including Civil Defence, might assume a higher profile. The recruitment of Civil Defence Police would imply a close liaison between local Civil Defence organisers and Police commanders, at least during the recruitment and possibly the training phases.

The possibility of local physical disasters during the first few hours has been noted earlier, and some could be large enough to trigger a Civil Defence Emergency. Many manufacturing and production processes could not operate without electronic controls; in some the safety systems are also monitored and controlled by electronic systems. An instantaneous failure of mains electricity and electronic controls could prevent some processes, such as oil refining and other petrochemical processes, smelting, and kiln operations, from "shutting themselves down" or being manually "shut down" safely. Fire and explosions could result from such a disastrous combination of events. It is unlikely however, that this form of Civil Defence commitment would be triggered after the first few hours post-EMP. It would not be a long-term commitment.

Longer-term, nuclear winter effects might initiate Civil Defence emergencies. Protection of crops to ensure their survival through the several months of colder conditions may require emergency measures involving the deployment of many people. Widespread damage to buildings through burst water pipes may require Civil Defence intervention. Conservation of scarce fuel for heating and lighting might be best met by the organisation of community living centres, at least for meals and sleeping, and again Civil Defence might be able to help coordinate community groups who may be involved in such work. Civil Defence might be able to integrate community volunteers such as the Coastal Watch systems in more remote localities where Customs did not have a permanent presence.

The Earthquake and War Damage Commission

The exclusion clauses and conditions under which the Earthquake and War Damage Commission covers war damage to property would appear, on the surface at least, to preclude that organisation from extensive commitments post-war. However, some situations clearly seem to be covered, and claims could conceivably be lodged for:

- i. Direct damage from aggressive military acts by enemy forces.
- ii. Damage by New Zealand forces in the course of defence activities.
- iii. Direct and immediate consequential damage caused by an EMP (e.g., failure of safety systems in industrial processes).

Some doubt exists regarding its obligations in the event of damage caused by (aggressive) military refugees trying to secure a haven in New Zealand. Claims would be expected should this occur, but the agency's obligations is not clear. The responsibilities are also not clear for crop loss claims and other damage due to adverse weather conditions attributable to the nuclear war.

Consequential losses of an indirect nature would not be met; these might include loss of trade, damage by refugees trying to get ashore, and so on.

A more fundamental issue would be the asset-backing of the Earthquake and War Damage Commission to cover the extent of damage which might follow the scenarios. The non-EMP scenario does not imply consequences of as great a significance for the Commission. However, if an EMP damaged the major components of the country's private and corporate transmission systems, communications networks, computer systems and industrial processes, the cost of restoration would far exceed the \$1.4B currently held in reserves.

The insurance industry

The Insurance Emergency Service Plan indicates how the industry might respond to some aspects of post-war situations at a local level. However, much of this planning would be rendered entirely superfluous by a major Northern Hemisphere nuclear war. The New Zealand insurance industry relies on the backing of its own "onwards insurance" with Northern Hemisphere insurers, and on its overseas investments, most of which are in the finance sector. Insurance industry spokesmen predict that within weeks, if not days, the financial services sectors of New Zealand would have collapsed entirely; that there would be complete government control of finance; and that, apart from the retention of some "...rationed services", the insurance industry would "... simply cease to exist". Rationed services would probably be confined to small claims in areas which are socially sensitive, but large claims would be met on the basis of government-imposed priorities for economic and social maintenance.

Other community services

The St. John Ambulance organisation anticipates restrictions on its ability to maintain essential services until communications are restored. In the absence of contingency plans, the medium- and longer-term problems would be the logistics of maintaining traditional services, spare parts, fuel, communications and medical supplies as these became increasingly scarce.

Church groups involved with migrant and refugee settlement foresee enormous, but not insurmountable problems. Problems would include the provision of food, accommodation, training, and skilled interpreters. Church agencies emphasise that they believe humane and charitable actions should be the response of the government and New Zealanders following such a disaster.

CONTENTIOUS ISSUES

Rationing

Rationing of scarce resources including food, fuel, insurance service, communications equipment and drugs would be useful. Rationing might be accepted by many citizens as an unfortunate necessity for the common good. The priorities which would be set and the criteria for setting them are likely to be contentious; for example, the provision of scarce resources to prisons has been mentioned by Justice Department as a potential source of resentment in the community.

Government departments may be involved in disagreements between each other about priorities. Several departments felt that their operation's communication systems should be accorded the highest priority for repair after an EMP.

The criteria for priorities for rationing would need to be perceived as fair, clearly put, and firmly policed, to minimise resentment from the public. The control and rationing of imported medicinal drugs is seen by commentators as a particularly sensitive issue, especially if a policy was contemplated which discriminated between different categories of drug-dependent citizens.

Possible government response and structure

The national civil defence structure is not regarded as having a wide enough brief, sufficient experience, or enough authority to deal with the many consequences likely to follow a nuclear war. Most commentators anticipate a swift suspension of "Westminster rules" with the empowering of an emergency Cabinet, possibly bi-partisan and involving some permanent heads, as a policy/decision-making body.

The mechanism for constituting such a body was speculated upon; the Public Safety Conservation Act 1932 was not seen as an appropriate mechanism, given the enormous outcry against its introduction and implementation in the 1930s and in the 1951 wharf strike. In any event the government has introduced the International Terrorism (Emergency Powers) Bill which will repeal the Public Safety Conservation Act 1932. Some commentators felt that getting an emergency Cabinet established and operating quickly would take precedence over any legal niceties involved in its constitution.

A World War II style of government was seen as most likely - one which, despite its being essentially democratic, had enormous powers to control the resources of the country. Some pointed out that New Zealand's elongated geography poses problems of communication, and the EMP scenario was seen as further jeopardising the effectiveness of a centralised government structure. It was speculated that near-autonomous local control was a distinct possibility, at least during the first few weeks until a national communications network was re-established.

Issues relating to refugees are discussed in Background Paper 18.

PRE-WAR PLANNING OPTIONS AND RESEARCH TOPICS

The level of preparedness and conceptualising of disasters in Australia has been described (Britton, 1986) as fixed at the "accident and emergency level"; that contemporary thinking is that "disasters are just big emergencies". Similar observations could probably be made of the New Zealand situation. While it could be said that much of the everyday activity and ordinary contingency planning of each department studied is a preparedness for coping with emergencies, it is certain that none of the agencies visited have developed contingency plans specifically to deal with situations having physical impacts and social consequences of the magnitude envisaged. The vast spread of impacts on the operations of every individual and organisation throughout the nation would produce a scale of events beyond anything that current plans have embraced.

Therefore, in almost every field where state agencies are involved in social control or rehabilitation and recovery, contingency plans and strategies could be devised to heighten their preparedness for widespread disaster and to ameliorate its worst consequences. The background information on which this paper has been based was not an in-depth coverage of each department's activities, so detailed research will be a necessary prelude to the formulation of contingency plans. Within each department the research could focus on specific features unique to that agency's responsibilities, whereas inter-departmental studies would reveal common issues and problems (such as communications: types of, compatibility with each other, locations, vulnerability, spares, technical expertise and so on), so that integrated strategies could be developed. The question of priorities for restoration of services should also be addressed in the plans.

Without more intensive research only general statements can be made, but it should be obvious from the previous sections that deficiencies exist in many areas; some of these will be covered in the following paragraphs.

Subjects for planning

Staffing

Almost every department has said that it would face severe shortages of staff, beginning immediately after the nuclear war, or even sooner if reliable preliminary warning signals were apparent (escalating skirmishes, invasions, declarations of war, etc). Not only would extreme staffing problems exist, but the staff required would need to have at least an elementary training in the basic operations and routines of departments if they were to be effective contributors to the management of the crises expected.

Physical Resources

Physical resource planning issues are evident from the previous sections; the two main areas requiring detailed study are electrical/electronic communications and data processing, and transport.

Once again, identification begs the questions that inevitably arise:

- i. What would be the departmental requirements?
- ii. Which of existing resources would survive and which would be ruined?
- iii. Which existing resources could be protected and at what cost?
- iv. Which resources are so essential that they should be duplicated in secure storage? What would that cost?
- v. What alternative systems could be used as substitutes? What older technologies are there still in situ; should these be retained and not removed when modernising of equipment is undertaken?

Policies

Commentators identified the following policy areas as requiring consideration and clarification.

- i. **Government and administrative control**
 - # Determine the styles of government which might be the most appropriate for the different scenarios which might eventuate; clarify the scenario conditions and consequences which might trigger one rather than another model of governmental control.
 - # Identify chains of command and authorities for regional or local control. Clarify the feasibility of maintaining decentralised yet uniform systems of government.
- ii. **Communications**
 - # Develop contingency plans to stockpile spares or protect communication systems.
 - # Determine priorities for the restoration of essential services; decide between the competing departmental demands; determine strategies for achieving restoration with maximum efficiency.
- iii. **Transport**
 - # Determine priorities for fuel usage.
 - # Determine "least essential" criteria for the retention of motor vehicle use.
 - # Determine sectors from which vehicles would be commandeered and determine whether compensation would be paid.

- iv. Law
- # Define legal provisions for initiating responses to mass disorder.
 - # Prepare drafts of simpler definitions of offences during disaster periods.
 - # Review aspects of due process to streamline procedures during disaster periods. Consider alternative methods of processing lesser crimes should there be a massive increase in this type of offending.
- v. Information
- # Develop alternative communications systems to ensure information can be efficiently transferred to all parts of New Zealand.
 - # Develop alternatives to "chip-dependent" mass media communications to ensure information can be disseminated quickly (or use EMP-hardened chips).
 - # Consider the possible contents of mass media statements that could be issued, to cover alternative situations and outcomes.
- vi. Employment
- # Determine the best strategies for resolving people's conflicts between work and family/home/community responsibilities.
 - # Prepare strategies to deal with mass unemployment. Prepare possible alternative employment activities.
- vii. Supplies and Rationing
- # Develop strategies for ensuring that food and other provisions are distributed so that they are available to all citizens.
 - # Establish criteria for setting threshold stockpile levels below which rationing is imposed.
 - # Establish a policy (selection criteria) for the rationing of scarce essential services and resources (e.g. ambulance fuel, life-sustaining drugs, etc).
- viii. Emergency Services
- # Devise strategies to encourage more citizens to become trained for emergency service.

- ix. **Personal Distress**
- # Prepare strategies to help deal with widespread personal anxiety, grief and depression.
- x. **International Relations**
- # Clarify the position to be adopted by New Zealand in its relations with its Pacific neighbours.

CONCLUSIONS:

The main findings are that:

1. **Planning**

No Department has planned for after a nuclear war.

2. **Staffing**

- a. Post-war, most social control and rehabilitation/recovery agencies would have serious difficulties in maintaining services through a massive shortage of trained staff.
- b. No department has specific contingency plans by which staff shortages could be rectified quickly.

3. **Electronic equipment**

- a. Most agencies are extremely dependent upon mains electricity and various electronic communication and data processing systems. These systems are vulnerable to the effects of a high energy EMP emission.
- b. Few specialist technicians are permanently employed to maintain the hardware aspects of departmental electronic systems; routine maintenance by commercial suppliers meets the needs of most departments.
- c. No department has stockpiles of surplus or duplicated equipment; some might be able to adapt their search and rescue and other emergency equipment as a limited, temporary communications network, if it survived an EMP.

- d. Most departments regard their own operation as having high priority for restoration; priorities do not exist to establish which services would be most urgently required.

4. **Transport**

- a. Transport is crucial to the operations of almost every department.
- b. The fleets of most departments include modern vehicles, many of which are susceptible to EMP.
- c. Fuel would be scarce.
- d. Contingency plans do not exist to determine priority uses of vehicles, non-essential users from whom vehicles could be commandeered, or criteria for rationing fuel for departmental and public use.

5. **Personal distress and social disruption**

- a. Nuclear war would be devastating to the very fabric of our society; every person and every facet of our way of life would be affected.
- b. There would be widespread anxiety, fear, grief and depression, and probably considerable anger. Hundreds of thousands of people would suffer considerable or extreme emotional stress. This would affect all government workers and departments.
- c. Present mechanisms to cope with personal distress would be totally overwhelmed; many present care-givers will themselves be severely distressed.
- d. There would be outbreaks of anti-social behaviour.
- e. Individual and group behaviours, and agency adjustments will have interactive effects on each other. Ill-considered and inappropriate responses from authorities would trigger or inflame delicate situations.

6. **Information**

- a. Communications of accurate information from credible sources would be required urgently and would need to be maintained.
- b. Robust systems to sustain the information flows would be essential.
- c. High standards of factual reporting would be important.

7. **Legal systems**

- a. Many aspects of current practices would impose severe difficulties

should there be a significant upsurge in criminal behaviour.

- b. Mass disorder would be impossible to contain with present staff numbers and systems available to police.
- c. The definition of offences, charging procedures, and other aspects of due process would require revision.

8. **International affairs**

- a. Present policies would need to be reviewed to incorporate appropriate responses for dealing with various categories of visitors who are present in New Zealand and migrants.
- b. Policies to guide our relations with Pacific neighbours need to be formulated.

REFERENCES

- Accident Compensation Commission, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Ball, D. and Langtry, J.O., 1983. *Civil Defence and Australia's Security in the Nuclear Age*. George Allen and Unwin, Sydney.
- Britton, N.R., 1986. 'Developing an Understanding of Disaster'. *Australian and New Zealand Journal of Sociology*, Vol. 22, No. 2.
- Campbell, D., 1982. *War Plan UK: The Truth about Civil Defence in Britain*. Burnett Books, London.
- Civil Defence, Wellington Region 1986. *Ru Whenua: Civil Defence Exercise Damage Assessment*.
- Customs Department, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Department of Labour, 13/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Department of, Social Welfare, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Earthquake and War Damage Commission, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Giuffrida, L., 1984. *Objectives for Local Emergency Management*. Federal Emergency Management Agency, Washington, DC.
- Human Rights Commission, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Internal Affairs Department, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Lessels, J., 1986. *The Australian Civil Defence Scene*. Address to an International Conference on Civil Defence, Canberra.
- Ministry of Civil Defence, undated. *Civil Defence: Government Action in Major Disaster*. Government Printer, Wellington.
- Ministry of Civil Defence, 1986/87. *Draft Revision of Civil Defence: Government Action in Major Disaster*.
- Ministry of Defence, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Ministry of Foreign Affairs, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Ministry of Justice, 31/3/86. *Report to the House of Representatives*. Government

- Printer, Wellington.
- Ministry of Police, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- Ministry of Transport, 31/3/86. *Report to the House of Representatives*. Government Printer, Wellington.
- New Zealand Government, 1939. *New Zealand Government War Book*. Mimeographed, no publisher listed.
- New Zealand Government, 1939. *Royal New Zealand Army War Book*. Mimeographed, no publisher listed.
- New Zealand Government, 1979. *Public Safety Conservation Act, 1932*. Government Printer, Wellington.
- New Zealand Government, 1983. *Civil Defence Act, 1983*. Government Printer, Wellington.
- New Zealand Times, 20/10/85. *Nuke Fallout Plan Revealed*. Auckland.
- Parr, A.R., 1982. *Future Contingencies 2 : Societal Disaster*. Report to the Commission for the Future, Wellington.
- Preddey, G.F., 1981 *Future Contingencies 1: Natural Disaster*. Report to the Commission for the Future, Wellington.
- Preddey, G.F., Kjellstrom, T.E., Wilkins, P.C., Williamson, B.R., and Wilson, N.A., 1981. *Future Contingencies 4: Nuclear Disaster*. Report to the Commission for the Future, Wellington.
- Preddey, G.F., 1985. *Nuclear Disaster, a New Way of Thinking Down Under*. Asia Pacific Books, Wellington.
- Select Committee of Foreign Affairs and Defence, 1985. *Disarmament and Arms Control*. Government Printer, Wellington.
- Shaw, J., Gueritz, E.F., Stanhope, H., Evans, P., and Buchanan-Brown, J. (Eds), 1982. *Nuclear Attack: Civil Defense*. Brassey's, Oxford, UK.
- The Press, 17/10/85. *Caution on N-War Planning*. Press Co., Christchurch.
- Ziegler, P., 1976. *The Black Death*. Penguin Books, London.