

# Earthquakes in Utah Will Your Business Survive?

Utah Seismic Safety Commission  
1996 Earthquake Conference  
*Summary Statements*



September 26, 1996  
State Office Building Auditorium



# Utah Seismic Safety Commission

## 1996 Earthquake Conference

### Morning Session: M-6.7 event in the Salt Lake Valley

**Presenter: Chief Robert L. Swenson, Director of Emergency Services  
Salt Lake County Fire Department**

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Discussion will include response to catastrophic earthquake occurring in the Salt Lake Valley.

What are the initial problems we face?

*Major incidents in many locations with a lack of good communications*

Can damage assessment be done?

*It is essential to have the damage assessment done A.S.A.P. to determine the response needs.*

What can be done with what we have?

*The Salt Lake Valley has a total of about 70 Engine Companies, this compared to southern California that has upwards of 500 Engine Companies. This will require a disciplined priority of needs. We always consider the following in establishing priorities. Life, Property and environment.*

What is the priority of response.

*This is dependent on the time of day and time of year. High priority is large gathering places such as Schools if in session, Hospitals, Nursing homes, Day care, Auditoriums, Theaters, Apartments and Condominium. As you can see, single family dwellings don't make the list.*

What outside resources we will call on?

*Because of our remote location, outside resources will be coming from Reno and Las Vegas. We will request Urban Search and Rescue Teams from FEMA to assist our own USAR Team.*

What may not receive assistance?

*Single family dwellings, some commercial property and in general unoccupied buildings. It may be that instead of containing fires to the building of origin that we contain the fire to the block of origin.*

# **Utah Seismic Safety Commission**

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**Morning Session: M-6.7 event in the Salt Lake Valley**

**"Insurance Scenario"**

**Presenter: Chris Purcell,  
Western Insurance Information Institute**

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The first day after any natural disaster presents unique challenges to the insurance industry. An earthquake presents even greater challenges. Insurance companies will be busy surveying the damage and determining their reserves and staffing needs. This effort will be greatly complicated based upon the condition of the basic infrastructure.

Loss of key highways will make it difficult for proper assessment of damage. It will also hamper insurance companies' ability to bring key personnel into the area. With virtually any other natural disaster there is some element of warning and the insurance industry can mobilize their resources and can be ready almost immediately to handle claims. The unpredictable nature of earthquakes makes advanced preparation at the site nearly impossible.

The insurance industry has taken great strides in utilizing technology to become more efficient and, thus reduce the cost of coverage for their customers. This same technology may increase the insurance industries' response time if communication lines are knocked out. There will be a mad scramble to bring computer systems on-line to retrieve information about policyholders. The larger and better prepared companies will utilize satellite technology to establish communication links to home and regional offices.

Bottom line. There will be virtually no funds being disbursed to policyholders the day of the earthquake.

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**One week after the quake**, the majority of insurance carriers should have their claims operations up and running. The industry as a whole should have some idea of the overall damage and individual companies will have set reserves based on their estimated losses.

The good news is that we do not expect any insurance companies to become insolvent due to the Salt Lake City Earthquake. The bad news is that a very small percentage of homeowners carry earthquake coverage and an even smaller percentage of business owners carry coverage.

The bad news swells quickly as residents of Salt Lake realize they were not insured for earthquake damage. There will be very limited coverage available from their homeowners policies, but not nearly enough to help people put their lives back together.

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**One week after the earthquake,** insurance companies will be issuing temporary living expense drafts to their policyholders but very few appraisals of structural damage will be complete.

**One month after the earthquake,** insurance companies should have a large percentage of their claims inspected. During this period several things happen that frustrate policyholders as well as the insurance industry. The most apparent is an exploitation of any shortages of construction labor and materials. This phenomenon is often termed as price gouging and can lead to early estimates of repairs increasing by 100 to 200%.

While many earthquake policyholders will have at least some funds available for repairs, the lack of contractors and materials will mean very few have repairs underway. Many homes will still be uninhabitable and frustrations among people displaced by the earthquake will be running high.

**One year after the earthquake,** all claims will have been inspected but many claims will remain open due to several factors. Claim staffs will be greatly reduced but insurance companies will still have a large presence. Many homes are still not repaired and people will still be displaced from their homes.

Temporary living expenses may begin to run out after a year. Disagreements between contractors, policyholders and the insurance companies regarding the price of repairs will also exist. Even though it has been a year since the quake, the insurance industry is a long way from being finished with its obligations.

# **Utah Seismic Safety Commission**

## **1996 Earthquake Conference**

### **Morning Session: M-6.7 event in the Salt Lake Valley**

**"Expected Financial Conditions Following a Large Scale Earthquake"**

**"General Requirements For Ongoing Financial Stability"**

**Presenter: Charlie Fox, Emergency Management Director,  
First Security Bank**

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In a 6.5 (Richter) earthquake in Salt Lake City, a number of disruptions can be expected to occur which will affect the ability of financial institutions as well as other suppliers of critical service to provide essential services immediately. It is assumed that the quake will cause at least limited outages to commercial electrical power, data and voice communications, critical business facilities, and ground and air transportation. For this exercise, we will assume that bank personnel are available. The following events are expected:

#### **Impact to 24 hours**

Limited or no financial services available to devastated area  
Damage assessment and plan activation by financial institutions.  
People are contacted, hot-sites are notified, backup data is accessed, backup communications lines are activated, etc.  
Limited financial activity may be possible at branches where damage is minimal and customers are known  
Local ATM's will not be functioning.  
Checks will not be processed at central processing sites.  
Transportation impacted (fuel, road closures, etc.)  
Normal electronic funds transfers are not occurring to other financial institutions (paychecks, mortgages).

#### **24 hours to 72 hours**

Increasing financial activity for critical function, probable cooperation between banks.  
Mainframe processing is restored at remote locations, check processing may be delayed  
Access to on-line functions restored as interstate communications networks are repaired by carriers and intra-company networks are restored by bank technicians.  
Critical functions will be restored at available locations.  
Damaged branch bank activity for critical applications will be restored at undamaged or remote locations as events and conditions allow. Depending on damage, this may take substantially longer than 72 hours.  
Emphasis is on maintaining customer files and information. Probably no new business will be transacted.



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#### **Central Data processing capability**

- Electric power (UPS system)
- Functioning systems and disk drives
- Check and credit card processing equipment
- Data availability

#### **Functioning communications networks**

- Commercial carriers functioning
- Intrabank networks (LAN's, WAN's, Connectivity, Terminals & P/C's, etc.)
- Interbank and international networks for transferring funds

#### **Banking Facilities**

- Branch banks and offices
- ATM's
- Special application facilities

#### **Support services**

- Supplies. Security, Public Information and Communications

#### **Bank Personnel to enact/facilitate transactions**

- Personal preparedness or injury to family members
- Fuel or transportation gridlock

### **Required Business Continuity Plans for Financial Institutions**

**Banking preparations to mitigate and reduce the damage from an earthquake include: hardening the communications and networks; UPS's to provide backup electrical power to critical equipment and locations; redundant data processing capability for critical functions and application platforms; backup data storage in secure and accessible locations; hot-site mainframe processing capability in remote locations; prepared and available EOC's and alternate business locations; and access to critical backup supplies. Because of today's electronic financial interactions, national and even global repercussions can be expected from a severe Utah**

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### **Required Business Continuity Plans for Financial Institutions**

earthquake. Since it is impossible to know the severity or location of a damaging quake, proper preparations must consider and prepare for all levels and locations. This is a monumental and very expensive ongoing effort. Bank business continuity preparations are regularly and extensively audited by OCC examiners to ensure adequacy.

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#### **After first week:**

Most financial services are available, although possibly degraded or conducted at other locations.

Restored communications networks allow ATM functions, on-line application functions are increasing.

Data processing is being brought current and normal customer accesses to data are becoming available.

Checks are being processed and loan files are now accurate.

New business will begin to be conducted.

#### **After first month**

Full financial services are expected in functioning locations. Damaged locations may not be in service.

#### **After first year**

All banking services are restored, but the memory lingers.

#### **Best Plan for Immediate Access to Financial Resources**

The best preparation for people is to have at least a limited amount of cash on hand in the 72 hour kit. *“Cash is King”* when credit cards and checks cannot be checked or verified on-line. The amount varies with the individual family daily needs.



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### Morning Session: M-6.7 event in the Salt Lake Valley

"Engineering and Architecture in the Salt Lake Valley"

Presenter: Ron Reaveley, Reaveley Engineers & Associates

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#### **Reconnaissance/Evaluation- When can the buildings be back in service?**

*Salt Lake City and Salt Lake County Building services has assembled volunteer services from professional engineers and other trained individuals for rapid evaluation of damaged structures. Teams will be assembled within 24 hours of an event. Evaluations will take place over three weeks. Post evaluation may need an additional 4 weeks for more detailed evaluations. Some companies have acquired commitments from professionals for priority service from professional engineers.*

#### **Hospitals**

*Estimates show that approximately 50% of the hospital beds will be out of service immediately after an earthquake. Most hospitals have emergency plans to provide full services within 24 hours after an event.*

#### **Public Services, Police, Fire and Communications**

*Essential services for police and fire may have brief interruption, due to power outages and communications. See Lifelines. New stations are built with added seismic potential. Older facilities may have damage to equipment and stations.*

#### **Schools and Churches**

*Generally are looked to for central services and refuge in a disaster. Localized public centers for relief, food and shelter. Older buildings may not survive. Newer and upgraded buildings may be damaged, but may still be used for local communities or neighborhoods.*

#### **Offices**

*Older buildings made of brick will have the most damage. Approximately 40% of the commercial and government buildings will be damaged from a moderate to severe level. Newer and taller structures will have some non-structural damage, but can be occupied within one week to one month. Upgraded structures should provide life safety protection.*

#### **Residential**

*Approximately 30% of the residences in Salt Lake County are unreinforced masonry construction. These homes will sustain moderate to severe damage. Of the remaining homes another 30% will sustain moderate damage. Most homes with brick veneer will be stripped of some or all of the brick veneer. Most frame and stucco homes, especially if built within the last 20 years will survive with little structural damage.*

#### **Other**

*Most monetary damage from an event will occur in non-structural components of a building. This includes building equipment, furnishings, glass and doors. Things like books, computers, office equipment will be strewn around within a room.*

*Books or items in shelves will not stay inside the shelves unless restraints have been installed. Ceilings and lights which do not have bracing may fall, making travel into or out of a room very difficult. Overturned storage shelves and file cabinets will be impossible to move and will make exiting a difficult task. Pictures, or displays hung on a wall will fall.*

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### Morning Session: M-6.7 event in the Salt Lake Valley

#### "Lifeline Damage Scenario For The Salt Lake Valley"

Presenter: Pete McDonough, Mountain Fuel Supply

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A magnitude 6.7 earthquake epicenter in the Salt Lake Valley would effect lifelines to various extent, base on level of soil shaking, liquefaction and faulting. Since lifelines are often made up of various components a single weak link may compromise the entire system. Conversely, system redundancy may mean that several severe failures may only cause temporary, local disruption.

#### **Surface Transportation**

*Commuters can anticipate lengthy traffic jams for most of the year following the earthquake. Residents will have inconvenience on local roads for the first month.*

#### **Railroads**

*Within one week tracks should be open.*

#### **Electric**

*Due to the ability to reroute power, most customers will probably have electricity within 48 to 72 hours. Virtually all will have power within one week. However brown-outs might continue for several months.*

#### **Water**

*Residents can anticipate being without water for at least one week, with the possibility of water restrictions for at least one month.*

#### **Sewage**

*Residents will probably be able to use their toilets and drums as soon as water becomes available, but will continue to receive instructions and notices to minimize use for the entire year.*

#### **Natural Gas**

*Natural gas customers will likely see service interrupted for up to two weeks after the earthquake, with all customers receiving service by the end of thirty days.*

#### **Telephone**

*Telephone users will have frustrating delays the first week after the earthquake. Cellular phones will be used extensively during this week to bypass the "hard wire" system. By the end of the week the system should be restored, however phone use will continue at a high level for several weeks as overall community restoration efforts become active.*

#### **Airports**

*The airports will likely be open for small planes within twenty-four hours of the earthquake, with full service restored within thirty days.*

**A 1991 study by the Applied Technology Council (ATC 25) estimates that indirect economic losses due to lifeline disruption from a worse case (magnitude 7.5) Wasatch Fault earthquake could equal \$3.84 billion.**

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### **Morning Session: M-6.7 event in the Salt Lake Valley**

**“Packard Bell Experience in Northridge”**

**Presenter: David McWilliams,  
Packard Bell NEC**

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#### **Day of the Earthquake**

- Business is shut down, exterior damage is identified
- Account for those who were working
- Business Response Team handles evacuating/ rescues
- Time of quake 4:29 a.m. (very dark) 30 employees
- Shift change
- Injuries occurred when individuals re-entered a two story building
- Temporary medical service (by company CERT members) set up clear of the damaged facility

#### **One Week Later**

- Internal damage has been assessed (can worked proceed?)
  - Yes - go back to work; what jobs do you need?
  - No - identify new sit; move forward
  - Chatsworth to Westlake / salvage equipment

#### **One Month Later**

- All jobs are back
- Transition to Utah for may particular department
- New facility is still under construction/repair/transition while people continue to work (tough work conditions)
- Phones go down, network goes down frequently

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### **One Month Later**

- In Utah, small phone support unit is operating, hiring process begins
- Initial disaster plans are re-evaluated by executives (flexibility)

### **One Year Later**

- Work force has been equalized / expanded
- Transition of Utah facility is complete
- Plans for future quakes will be evaluated, reassessment of what we did right/wrong

# Utah Seismic Safety Commission

## 1996 Earthquake Conference

Afternoon Session (State Office Building Auditorium)

### What We Did and Why We Did It

DeAnn Fountaine, State Farm Insurance

1. Welcome
2. What motivated me.
  - a. In service and stories told of agent operations in areas of prime earthquakes.  
San Francisco, Loma Prieta 10/17/89.  
Northridge, L.A. 1/17/94
3. How I got started
  - a. Built own bldg.-moved in Nov. 95, had tenants by Jan. 2nd.
  - b. Added endorsement per 1000 bldg. 183.00 yr.  
per 1000 cont. 183.00 yr.
4. Contract water cooler supplies 14 , 5 gal of water on hand, rotated not including the ones being used, used ones.  
Got wrenches to turn gas off. Braced water heater, screwed bookcase & pictures to the wall.
5. Reached an emergency food specialist for food. Ordered kits for staff & my family. Offered them to tenants. Chose backpack so I can add my own creature comforts. Other equipment: 2 port Johns, 4 light sticks, 2 emergency radios, clear plastic sheeting to duct tape windows, make up change of clothes, including jacket & shoes, toothbrush, chocolate etc.
6. How to run an office with no electricity or phones.
  - a. Emergency plan 24 hours if daytime or 36 hours if nighttime.
  - b. Second place to do business if bldg. is totaled.
  - c. Sign on building with cell phone number.
  - d. Accessible roads other than freeway
  - e. Paper files to back up all my computer records.
  - f. Emergency office supplies (2 sets, one home one at office)  
Includes:
    1. paper loss form
    2. pens, pencils
    3. note pads
    4. staples, scissors etc.
    5. check book

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Afternoon Session (State Office Building Auditorium)

### **What We Did and Why We Did It**

DeAnn Fountaine, State Farm Insurance

7. The last person you want to call or reach under normal circumstances is an insurance agent. The first person you want to reach in this kind of circumstance is your insurance agent.
8. I want to be there, be calm, be able to start claims, and help my policy holders however I need to in this time.



# **Utah Seismic Safety Commission**

## **1996 Earthquake Conference**

Afternoon Session (State Office Building Auditorium)

### **What We Did And Why We Did It**

John Hlavac, Vice Pres. International Service & Support,  
Packard Bell NEC

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#### **What We Did**

- Moved to Magna, UT
- Call Center is located in a one-story Building
- Building has many emergency exits
- Not too many items in the ceiling that could fall and cause injury

**Packard Bell NEC, Inc.**

#### **Why We Did It**

- Move to Utah was planned prior to the Northridge quake
- Collapse of the two-story call center in Chatsworth
- Employees feel safe and secure that they can exit the facility quickly

**Packard Bell NEC, Inc.**

#### **Plans For The Future**

- Quarterly evacuation drills
- Train and update training for CERT
- Make sure that company policies & procedures are up-to-date

**Packard Bell NEC, Inc.**

# **Utah Seismic Safety Commission**

## **1996 Earthquake Conference**

Afternoon Session ( Capitol Room 405)

### **Three Little Pigs Revisited, House of Straw, Sticks or Bricks?**

Presenter: Ron Reaveley, Reaveley Engineering & Assoc.

#### **Engineered Buildings and Building Codes**

We will try to be informal in this session and discuss topics of interest to the participants. Topics will include building strengths and weaknesses. Even to the stereotypes of straw, sticks and bricks.

Building codes, engineering, architecture will also be discussed. Most materials will perform well with seismic loads, if properly designed and reinforced and connected together.

Performance of a building in an earthquake is dependent upon the following criteria:  
How close is the earthquake epicenter or fault line? What is the soil structure like below and surrounding the building? Has the building been engineered for earthquake resistance?

Buildings are constructed using four basic materials- sticks (wood), Brick (or masonry), Concrete, and Steel. Small wood buildings, like residences, usually will sustain some or little damage, give the R6.7 Intensity.

Brick buildings build prior to 1970 will sustain major damage.

Concrete building built prior to 1970 may sustain considerable damage.

Steel building built prior to 1970 may sustain some damage.

Seismically designed building will sustain some damage, but they will protect life safety.

Is a 25 story building as safe as a 2 story building?

Engineered buildings may have damage to non-structural components.

Engineering tall buildings should be as safe as engineered one or tow story buildings. Only the older buildings which have no seismic upgrade will be vulnerable to major damage.

Evaluating a potential workplace or residence. What should you look for?

Date of construction. And dates of upgrade or strengthening

Building configuration, symmetrical in plan, vertical configuration.

Seismic resistive elements, there location and shape.

Is the building connected together?

Seismic demonstrations and experiments with building models will be shown.

We will set aside time for questions and discussions.

# Utah Seismic Safety Commission

## 1996 Earthquake Conference

Afternoon Session (Capitol Room 414)

### **The Myths and Realities of Business Resumption**

Presenters: James Noah, Perpetual Storage

Former President, Utah Association of Contingency Planners

Mike Stever, Salt Lake City Emergency Program Manager

#### **MYTH:**

Employees will always panic in time of emergency and disaster.

#### **FACT:**

Panic is actually quite rare and usually occurs about ten per cent of the time. Panic is most likely to occur when:

- Danger is immediate (You feel the heat, smell the smoke, and see the fire).
- Escape is limited or impossible.
- There is a strong perception of isolation or being alone.

#### **MYTH:**

Employees will quickly heed warnings and take all actions necessary for their own protection and safety.

#### **FACT:**

Employees first reaction will be denial:

- It won't happen!
- If it does happen, it won't happen here!
- If it does happen here, it won't happen to me!
- If it does happen to me, it won't be that bad!
- If it does happen to me and it is that bad, there is nothing that could be done anyway!

Employees will take action when the danger becomes immediate. Tragically this is often too late for successful evacuations etc.

Warnings stand the best chance for causing action when they are issued repeatedly by credible sources.

#### **MYTH:**

In time of disaster, businesses will fail because:

- So many employees will be killed and injured no one will be left to staff the business.
- Society as we know it will totally collapse lawlessness and looting will literally destroy the ability to conduct business.

#### **FACTS:**

- Although we will all be victims, most of us will not be casualties. Even with worst case estimates, the percentage of the total population killed and injured is small. The odds of survival are in your favor.
- In natural disaster and technological disaster (with the exception of riot) there is no collapse of society rules and guidelines.
  - Looting is rare, although rumors of looting abound and receive media coverage.

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### **The Myths and Realities of Business Resumption**

**Presenters:** James Noah, Perpetual Storage

Former President, Utah Association of Contingency Planners

Mike Stever, Salt Lake City Emergency Program Manager

- Ordinary people accomplish extraordinary deeds, heroic acts and altruism are common.
- Short term delivery will disappear because of transportation disruptions. Businesses with no inventory or back up utilities will suffer immediately.
- Public Safety Officers and Responders will stay on the job but will totally overloaded.
- Business with their own response teams (CERT) stand the best chance of recovery.
- The speed of business recovery is in direct correlation with the preservation of records.

# Utah Seismic Safety Commission

## 1996 Earthquake Conference

Afternoon Session (Capitol Room 403)

### **CERT means BUSINESS!**

Presenters are members of the Sandy City Fire Department:

Andrew Glad & Dan Veenendaal

Debra Wolfley & Val Farnsworth

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## **Community Emergency Response Training is CERT**

CERT is business and the community joining together to help each other in times of a disaster. We introduce our disaster preparedness, disaster fire suppression, disaster medical, disaster search and rescue and disaster psychology.

Are you prepared to cope with your needs, your family needs and your employees needs? We should prepare for the following natural or manufactured disaster;

- Catastrophic airplane crashes
- Floods
- Hazardous material incident
- Earthquake

You need to know your local fire department capabilities during a disaster. We introduce you to size up and suppression of fires using available equipment. You will be on your own for fire suppression.

Are you prepared to handles sick, injured and dead during a disaster? The mission of disaster medical is to do the most good for the most people in the shortest time with limited supplies. We learn about and how to treat the airway, bleeding and shock. You learn to classify patients for treatment.

A disaster affects people in different ways. We learn how to interact with disaster victims and survivors and how to protect yourself.

We have a disaster where we can practice the skill we developed during the CERT training program.

# Utah Seismic Safety Commission

## 1996 Earthquake Conference

Afternoon Session (Capitol Room 225)

### Business Preparedness Means Employee Preparedness

Presenter: Robert A. Neilson, Association of Contingency Planners

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A business cannot be prepared if the employees that provide the work force to that company are not prepared both individually and as a family.

- Prepare to succeed in response and recovery to a disaster.
- Prepare by assisting your employees in their preparations.

#### ***FIPP***

Participate in a crash course in the basics of *Family and Individual Preparedness* for the employee. See how quickly and inexpensively you can help your employees on the road to having a plan for themselves and their families. Take a basic employee planning kit back to your company that is ready to use. You can tailor it to fit your company's needs.

Large or small, disasters can be broad based or exclusive to your business. What's more, disasters can be exclusive to one employee or their family. Help your employees to prepare for every disaster they might face with some basic planning skills and the knowledge that they are an important part of your business.

It is a formula for success. You, your employees and planning. **You can't fail.**