_experience the commitment

CGI Insurance Business Services

Atlantic Division

September 23, 2004

CGI Atlantic Division

- Former IAO
- Purchased by CGI January 2003
- Engineering, Inspection, and Database Services
- Administers “Fire Underwriters Survey” on behalf of P&C Insurers
- IAO Actuarial Consultants INC., rate making organization for insurers.

Fire Underwriters Survey

- DEVELOPS PUBLIC FIRE PROTECTION CLASSIFICATIONS BASED ON A GRADING SCHEDULE
- CONDUCTS SURVEYS OF FIRE SUPPRESSION CAPABILITIES OF MUNICIPALITIES
- PROVIDES ADVICE TO INSURERS ON LEVEL OF PROTECTION IN A MUNICIPALITY
- SYSTEM HAS BEEN AROUND FOR CLOSE TO A CENTURY
- UNDERLYING PRINCIPALS BASES ON; NFPA, ULC/ULI, AWWA, AND NATIONAL FIRE/BUILDING CODES

PUBLIC FIRE PROTECTION CLASSIFICATIONS

- COMMERCIAL CLASSIFICATIONS, 1 TO 10 SCALE, WHERE 1 IS THE BEST (NOTE: COMMERCIAL CLASSIFICATIONS INCLUDE INSTITUTIONS, AND HABITAT IONAL OCCUPANCIES OVER 6 DWELLING UNITS)
- DWELLING PROTECTION GRADES, 1,2,3A,3B,4,5

PROTECTION LEVELS FOR CANADIAN COMMUNITIES

CLASS /POP	1	2	3	4	5	6-8	9-10
>100k	1	12	15	4			
50k-100k		5	18	24	5	2	
25k-50k			13	28	21	13	
<25k		2	7	75	304	1493	1138
TOTAL	1	19	53	131	330	1508	1138

USE OF FUS CLASSIFICATIONS

- IBC STATISTICAL PLAN, ACTUARIAL FILINGS UNDER FEDERAL REGULATION
- COMMERCIAL LINE LIMITS, CONSTRUCTION RELATED TO FUS CLASSIFICATION
- COMMERCIAL LINES SPECIFIC RATING
- PERSONAL LINES PREMIUM CALCULATION (VARIES BY COMPANY, EXCLUDES POSTAL CODE RATING SYSTEMS)

EXAMPLE SPECIFIC ALL RISK RATES FOR FUS CLASS 4,5,6,7,10

- RESTAURANT, NOT LICENSED, FRAME CONSTRUCTION, NO PREVIOUS CLAIMS
- COMM.1 (FUS 4) BUILDING .396 CONTENTS .641
- COMM. 2 (FUS 5) BUILDING .457 CONTENTS.682
- COMM.3 (FUS 6) BUILDING .541 CONTENTS.748
- COMM. 4 (FUS 7) BUILDING .617 CONTENTS .809
- UNPROTECTED (FUS10), BUILDING .788 CONTENTS 1.005

DWELLING LOSSES BY POSTAL CODE

TYPE OF INSURED LOSS (5 YEARS)	NUMBER	DOLLAR LOSS
FIRE - BUILDING	133	$3,061,155
FIRE - CONTENTS	78	$1,478,728
WINDSTORM	260	$352,187
WATER DAMAGE	711	$1,313,213
BURGLARY	72	$120,651
LIABILITY	35	$425,156
OTHER	303	$1,724,448

ANALYSIS OF LOSS STATS

- All municipalities have a degree of control over fire and burglary/theft losses.
- Municipalites have limited or no control over windstorm, water, liability, or other losses.
- Burglary/theft losses do not appear to be a major problem from an insurance loss viewpoint
- Fire losses are low in number but typically have the largest dollar losses. (low frequency high severity)
- Water damage is typically the largest number of claims, but dollar values are lower than fire losses. (high frequency low severity)

RELATIVE VALUE OF FEATURES GRADED

FEATURE	RELATIVE WEIGHT
WATER SUPPLY	30%
FIRE DEPARTMENT	40%
FIRE PREVENTION	20%
FIRE SERVICE COMMUNICATIONS	10%
TOTAL	100%

Impact of water supply

- Water supply makes up 30 percent of grading
- Without a water supply and hydrants best commercial grade can be is Class 9

What do we check

- Source – calculated available
- Pumping Capacities – both high lift (source pumps) and low lift (distribution pumps)
- Filtration capacities
- Purification restrictions
- Demands on the system
- Storage Capacities
- Facilities
- Maintenance
- Records

Source

- What is the actual source of water
- Pumping Capacities normal and maximum
- Power **supply's** look for not less than **two independent .**
- Feed mains to storage area not less than **two**

System restrictions

- Pumping restrictions- pump capacities, piping sizes internal and external, single feeds
- Filtration restriction maximum filtration capacities
- Purification restriction piping sizing, capacity
- To receive credit you require monitoring which ranges from site visits to SCADA systems 24 hours a day

Storage

- Sufficient to meet demands
- Maximum consumption is above the Fire Reserve
- Cycling of water
- Tank checks and maintenance

Most Deficient areas

- Records
- Testing and Maintenance

Records

- Pumping
- Water pumped from source
- Purified
- In storage
- Consumed (by metering)
- Lost through leakage
- Back up power testing
- Batteries
- Entrance and exit of facilities
- Maps not less than a secure copy and a backup copy

Records continued

- Hydrant testing
- Hydrant repairs
- Valve checks
- Valve rebuilds and repairs or replacement
- Breaks, repairs
- If you have no records or incomplete records maximum credit of 50%

Testing and Maintenance (Hydrants)

- Hydrants
  - ➔ – accessible
  - ➔ Cleared during winter
  - ➔ Working properly
  - ➔ Color coded, numbered and painted
  - ➔ Flushed twice annually not just opened and closed but flushed
  - ➔ Equipment for thawing and pumping if required
  - ➔ Spare parts on hand for each type ued
  - ➔ People trained for repairing them
  - ➔ Properly set and spaced 300’ commercial and 500 ‘ residential
  - ➔ Steamer ports
  - ➔ Located and identified on maps accurately
  - ➔ Hydrants will be one of the first indicators of the water supply system
  - ➔ Records of all of the above who, what, flows, repairs replacement etc.

Question we get sometimes

- Question: Does this qualify for a hydrant in a commercial complex

- Answer: NO

Testing and maintenance (Valves)

- Valves
  - Accessible not paved over or buried and not sticking out of the ground 5 feet
  - Free of debris
  - Identified – where, right or left turning color coded
  - Identified on plans **accurately**
  - Identified on valves if required
  - Spare parts
  - Exercised annually and tested
  - Security checks
  - Records of all of the above, dates, times, what was done, who did it, what was found and corrections or repairs needed and completed.

Procedures

- How to do everything from repairing a break to water quality testing
- Mapping- indicate break, and identify the repair
- Storage highs, lows
- Water conservation measures, what, when, enforcement
- Scada monitoring alarms and procedures for each type of alarm
- Security for all building, open areas and valves
- Hydrant and valve testing

Maintenance on Aux diesel pumps and Generators

- Battery – hydrometer readings weekly
- Run ups weekly not less than 20 minutes perferably under load
- Oil pressure
- Oil level
- Coolant level
- Corrosive test coolant
- Fuel levels
- Auto fuel shut offs
- Temp at 20 minutes
- Battery exercisers working

Maintenance on Aux diesel pumps and Generators continued

- Automatic systems working
- Fuel supplies should be adequate for minimum 24 hours

Safety

- Safety equipment for all aspects of job
- If required to work around open water not less than a PFD
- Electrical lockouts
- Confined Space entry
- If Respiratory equipment required (Chlorination SCBA)
- SCBA will be compliant for the gas and meet the requirements of OSHA and CSA
- Splash and eye protection
- Safety hat, boots gloves etc.
- Record of issue and testing as required

Where we have had an impact

- Various communities that wanted to improve their Water Supply system
- Water Rates with the Public Utilities Boards or equal
- Insurance industry
- Court on expert advice
- Enquiries

References

- National Fire Protection Association
- American Water Works Association
- Fire Underwriters Survey
- Underwriters Laboratory Canada
- Canadian Standards Association
- National Building Code
- National Fire Code
- Canada Labour Code
- National Institute of Occupational Health and Safety
- Occupational Health and Safety Association
- National Electrical Code

Thank You for the Invitation

- Questions ?