

MEMBERS PRESENT: Chairman Dini
Vice Chairman Schofield
Assemblyman Craddock
Assemblyman DuBois
Assemblyman Jeffrey
Assemblyman May
Assemblyman Mello
Assemblyman Nicholas
Assemblyman Polish
Assemblyman Prengaman
Assemblyman Redelsperger

MEMBERS ABSENT: None

GUESTS PRESENT: Please refer to the guest list attached to the minutes of this meeting.

Chairman Dini called the meeting to order at 8:07 A.M.

Mr. Dini stated that the first two bills that would be considered would be S.B. 214 and A.B. 505. We had a subcommittee of Mr. Jeffrey, Mr. Craddock and Mr. Redelsperger and it is now time for them to make their report to the committee.

Mr. Jeffrey stated that there were extra copies of the amendments to be discussed at the table in the committee room.

Mr. Fred Weldon testified first and stated that if it was the committee's wish he could just go through this section by section.

Mr. Dini stated that perhaps that would be the best way to do it.

Attached to the Minutes of this meeting is a copy of the amendments referred to by Mr. Jeffrey as EXHIBIT A.

Mr. Weldon stated that to start off with the subcommittee proposed a general provision that would be an overall change in the direction of the bill, A.B. 505 and this would be to make the provision of the bill apply only to existing buildings. Only to retrofitting, not future. Now they also wanted to make the general provisions that the localities may not adopt an ordinance which requires stricter measures than are required in this bill for retrofitting of the types of buildings and occupancies covered in this bill unless one of two things happens. One the ordinance applies to buildings and occupancies covered within this bill only when there is a change of use or change of occupancy, or if the legislative commission approves the ordinance.

Mr. Weldon stated further that through existing law new buildings are and would continue to be subject to the code adopted by the State Fire Marshal and also the applicable local ordinances so this would be a limit on what the local governments could do in requiring retrofitting.

Mr. Jeffrey stated that he might mention that this has been a problem and he was not sure that they had it resolved yet. If you will turn to the back page of the amendment under discussion, Fred and I talked briefly one day about the idea of limiting or restricting the retrofitting law only to the provisions covered in this bill and that is something we ought to discuss but the problem we ran into with the subcommittee was some local governments have already established ordinances that are tougher than this bill is and have been working with it for some time and I think it is a policy decision we are going to have to make and that is how are we going to handle the problem that the local governments have in dealing with the bill in the form that we have it and that is something that we felt needed to come back from the subcommittee to make that policy decision.

Mr. Weldon stated that in Section 1 of the bill, there were no changes proposed.

Section 2 defines the authority which is the authority later on describes that the authority has several rights to give variances to the different requirements and this authority also has the responsibility to do a survey of all the buildings that fall under this, so the definition of who this authority is will define who makes these types of decisions and who does the survey. Under the existing bill the authority is the Fire Marshal in the rural counties and the Chief of the fire departments in the urban counties. These amendments would make it for the fire marshal in the rural counties and the building officer in the urban cities and the urban counties, Washoe and Clark. So you would have the city building officer in the cities in the two big counties and the county building officer in Washoe and Clark so that is the change in authority there.

Mr. Jeffrey stated that the subcommittee felt that some people want to appoint authority between the fire department and the building department and then there was also discussion about whether it should be the building or the fire department. It was felt generally that there should be one final authority that people could go to to make a decision rather than two and in Clark County and I think in Washoe County also, the two departments would work very well and the people that fall under the building department and the fire department would have to be satisfied. That is pretty much the way it is worked in Clark County. I don't know whether they will have a dispute over that or not but it was felt that that was one of the problem areas we had.

Mr. Craddock stated that they would be bound by local ordinance in

the event they have a quibble the local authority can, by ordinance resolve the dispute.

Mr. Weldon stated that Section 3 of the bill, page 1, lines 6 through 18 would be amended. There is an except here - and the exception was for private residences; the committee felt that it would be more clearer to say single family detached dwelling. Also, under subsection 1 they allowed the authority to review and approve so they have the discretion on these exit corridors and the requirement is to equip every door to an exit corridor with a device approved by the authority which closes the door. The UBC - Uniform Building Code - says that these should only apply to exit corridors which serve 30 or more occupants so this conclusion was here and this requirement would only apply to exit corridors which serve 30 or more occupants now which is consistent with the Uniform Building Code.

Mr. Weldon further stated that in Section 4 again there was an inconsistency with the Uniform Building Code in that these provisions would only apply to buildings of three stories or more under the uniform building code so that was put in in every case, three stories or more and condominiums were added in here because it wasn't clear whether they should be or not under apartments and so they were added in at three stories or more.

Mr. Redelsperger asked if it was three stories in the Uniform Building Code.

Mr. Weldon stated that that was what they were told. Yes.

Mr. Jeffrey stated that the only exception was to the 1979 building code where we took the 5,000 square foot requirement inside a 12,000 square foot building which comes later, and the height requirement is trickier in this bill.

Mr. Dini asked what the average height of a multi-story building was.

Mr. Jeffrey stated that it was approximately ten feet.

Mr. Weldon stated that Section 5, page 2, lines 1 through 13 again condominium was inserted in here and the new language for subsection 1 would be: "Equip each room primarily used for sleeping in a motel or hotel and each dwelling unit in an apartment building or condominium with a smoke detector whose placement is approved by the authority". Originally this had required a smoke detector in every sleeping room. They felt that it was appropriate to only require it in every dwelling unit in an apartment or a condominium rather than in every single bedroom.

Mr. Weldon stated that with regard to Section 6, Page 2, Lines 14 through 39, there are only two changes here. One is to add condominium again and the other is to specify that we are talking about the floors here for this 55 foot limit rather than the roof or the peak or something like that. We are talking about 55 feet

to the floor that humans occupy.

The provision that made it 55 feet to the floor came out of the interim commission.

Mr. Weldon stated that on page 2, line 40, through page 3, line 6 would apply to Section 7. This gets into sprinklering of assembly rooms primarily, at the least the first part does. Under the existing bill it would require the owner of every building or a portion of a building used for public assembly except a church or theatre with fixed seating which has more than five thousand square feet of floor area including gaming or showrooms to have these sprinkled. The committee felt that if you had 5,000 square feet of floor area in a free standing building it should not be necessary to sprinkle that building. Some one should be able to get out of a free standing building of 5,000 square feet. The first change here was to eliminate the exemption for churches and theatres and the second one was to require sprinkling in room or rooms totaling more than 5,000 square feet used for public assembly within a building of 12,000 square feet or more. So you have a big building with assembly rooms inside of it and that is when this would trigger the sprinkling of assembly rooms and the exemption again was taken out for theatres and churches.

Under (b) here the original language had required sprinklers for portions of a building where you had public assembly which are certified for occupancy of more than 300 persons. It would say that they shall not use any interior finishes composed of combustible fibreboard. I think I have mixed myself up on that one - let me start over with (b).

(b) would say that for rooms within a building or a building itself used for a public assembly, if the occupancy was more than 300 persons they could not use any interior finishes composed of combustible fibreboard. The committee felt that this might be a little too strict and it didn't cover the subject completely either because it did not cover other types of interior finishes. For instance, plastics. So they proposed a change which would read: "which is certified for occupancy by more than 300 persons shall (a) use interior finishes which comply with Chapter 42 of the 1979 UBC or (b) if they don't want to install new finishes, they can install automatic sprinklers for protection from fire as required by regulations of state fire marshals. There is an exception here - except in those areas where the authority waives this requirement and the authority may waive the requirement from any space which is separated from these rooms by construction whose resistance to fire has been approved by the authority. This is the local authority.

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Mr. Dini questioned whether this terminology was in the fire code.

Mr. Weldon stated that as he understood it it is. That was the testimony we received.

Section 8 had no proposed changes.

Section 9 is the section which establishes the statewide board which could give variances - the broad types of variances - and would have the broad type of review authority. The name of the board is changed here from Fire Safety - Board of Fire Safety - to the Board of Building, Fire and Life Safety. The membership is changed from nine members to eleven, as we go through the membership, the Governor is to appoint a licensed architect. In the old bill it was two fire marshalls and two fire chiefs. The proposed amendment is three representatives of local fire departments with at least being one from a fire department in a county having a population of less than 100,000, existing professional engineer, two representatives of gaming and lodging, the State Fire Marshal, and two new ones here. A building official of the local government within each county having a population of 100,000 or more and a licensed general contractor. That is the proposed makeup of the new board with eleven members. The fire marshal in addition to his being a member of this board would also serve as secretary to the board.

In subsection 5 it speaks about calling of meetings and it would say that a majority of the members can call a meeting rather than any three members.

Section 6 is the per diem and the pay for these fellows. The new reading would be the members of the board except those who are paid by a public entity are entitled to receive a salary of \$80.00 for each day's attendance at a meeting of the board or a subcommittee of the board and all members are entitled to the per diem allowances and travel expenses provided by law. All such compensation is to be paid from the budget of the State Fire Marshal Division.

Section 10 has the change of the name of the board again. In the existing bill there is a whole laundry list of functions for this board. The subcommittee felt that if this bill is to be strictly a retrofitting bill that this board should be sunsetted after five years and that they should not get into all these general functions and they should perform only the one function that deals with retrofitting, so therefore the only function left in is number 6 under section 10, that the board would hear and decide requests for variances from and request to undertake alternate methods for achieving substantial compliance with the provisions of sections 3 to 7 inclusive of this Act. So this board becomes a hearing and decision board on variances.

Section 11 would add a provision that the board should collect a

fee of \$200.00 for each request for a variance and that the State Fire Marshal should collect the fees and deposit them with the State Treasurer for credit to the general fund. So this would not be a revolving fund in the fire marshal's office, it would be straight to the general fund.

Mr. Jeffrey stated that they did feel that there should be some kind of a fee for a variance to help defray some of the expense.

Mr. Weldon stated that the recommendation for section 12 is to delete it completely. This section was one which made the fire board a part of the fire marshal's office. They felt this was not appropriate if the board was going to be sunsetted.

Section 13 was to be deleted entirely as well. This section spoke about hiring staff to perform the duties of the Board of Fire Safety. As this bill is now written, all of the duties would fall within the duties of the fire marshal himself as secretary and he already has the authority to hire staff to help him perform his duties, so section 13 is not necessary.

Section 14 changes the word "authority". It allows the authority to be defined as previously done with the building officials. It changes the name of the fire board again.

Section 15 is a section which dealt with the terms of the members of the board. It is deleted entirely, again because the board is going to be sunsetted at five years.

Section 16 says that the Act shall become effective upon passage and approval and that is left alone.

Two new sections are proposed. Again, one is to provide that the board of building, fire and life safety would cease to exist on July 1, 1985. The reason this date was picked is that in the bill there are provisions for surveys and compliance and these provisions are a four year schedule within the bill. Sunsetting the board at the end of the fifth year would allow them to function for one more year to clean up the variances and that type of thing that they allow. It would also provide that you as legislators would be back in in 1985 and if you saw a need you could extend the life of this board. So that is how the 1985 date was chosen for sunseting.

Mr. Jeffrey stated that the reason that we sunsetted the board was the board would hear the variances and the decisions, but the State Fire Marshal has an advisory board that would cover the other duties that are mentioned in the bill as drafted and we felt it would be a duplication of effort to maintain two boards over a longer period of time than was necessary to hear these variances.

Mr. Weldon stated that the other new section is an appropriation from the general fund to the fire marshal division. It is consistent with their fiscal note that they filed. It calls for

\$164,648 the first year, \$140,627 the second year and this would be for paying salary, per diem and travel expenses of the board and for performing the duties given to the state fire marshal in this bill.

The last page - there are some questions - the first one is for a legal opinion relative to who has the actual legal authority to enforce and how they would go about this.

The second one deals with the thirty day question for a legal opinion and you have already outlined the discussion question. So these are the technical aspects of the amendments.

Mr. Mello asked why A.B. 505 was processed instead of the Senate Bill.

Mr. Jeffrey stated that there were various changes that would have had - and Joe and I have talked about this and our intent was to amend A.B. 505 into S.B. 214. S.B. 214 called for full sprinklerization and we felt that A.B. 505 covered more aspects of life safety than just sprinklerization and we wanted to get them all into one bill. We provided smoke detectors and communications and all these other things in 505 and it was our intent to amend A.B. 505 into S.B. 214.

Mr. Mello asked if this was still Mr. Jeffrey's intent.

Mr. Jeffrey stated with the sponsor's permission.

Mr. Mello stated that the reason he had asked that question was because it had already cleared one house and all we had to do was concur.

Mr. DuBois questioned the time frame. He stated that under this bill they have twelve months to make a survey and that would put it up to July 1, 1982 say for the longest possible period. Then you have another six months for the owner to come back with the plans, so now you are into December 31, 1982 and then you have to make all these alterations within three years which could be 1984. So from a year and a half, you only have about another year and a half for the actual construction. Is that a reasonable period?

Mr. Jeffrey stated that they questioned that in all the aspects. Mr. Jeffrey stated that they questioned whether there was enough time to do the survey and whether there was enough time to do the work after a survey was made but everybody seemed to think they could live with that, however, the fire safety board would have the authority to grant variances if they ran into time problems and I think they will because with the scope of this work depending on the local area, there may not even be enough people in the area to do the work and they may run into problems that way, but the fire safety board can grant variances if they run into a hardship with those time frames, although in the subcommittee hearings we had,

there was no objection to the time frame.

Mr. Jeffrey stated that he would think that there would probably be a subcommittee - one from the North and one from the South - that would meet and then get together at the monthly meeting to ratify the action that they had taken locally. Of course they still would have to make the decision as a whole board, but the subcommittees could do all the work.

Mr. Prengaman stated that he was a little unclear about the uniform building code. This apparently was used for some of the amendments but where does it fit in with the code that the State Fire Marshal has. Are they two different ones? One is a fire code and one is a building code?

Mr. Huddleston, State Fire Marshal, stated that we adopt a wide range of model codes inclusive of the Uniform Building Code and the Uniform Fire Code, etc., and we currently have adopted the 1976 edition. We upgrade our adoption as we have an opportunity to do so and anticipating up to the 1979 within the next two or three months. Hopefully after that we will be able to stay current. There was not a broad coded option had been made throughout the state prior to our adoption of 1978. We are just now getting to the point where we are updating to the 1979, but it will be consistent with that and I think it was chosen primarily because it is state of the art at this point.

Mr. Prengaman stated that he had another question and that he had noticed that they cut out the Fire Marshal's assistant. I am not that familiar with his office but it looks to me like he is going to have a full time job just retrofitting, meeting with the board and doing the research on variances and I am not sure what his other duties are but is one man going to be able to do all of this?

Mr. Weldon stated that the fiscal note calls for five new positions or six. The deletion here was a deletion that called in Section 13 for him to be able to hire staff to be able to perform the duties of the Board of Fire Safety. The duties that he needs to have staff for are his own and the existing law already allows him to hire staff to perform his own duties.

Mr. Jeffrey stated that they did not see the Board as having to have any staff.

Mr. Prengaman stated that he was unclear.

Mr. Weldon stated that as the Secretary to the Board his new people he is asking for would be performing these functions, secretarial, technical and this type of thing.

Mr. Prengaman stated that we are taking his existing staff -

Mr. Weldon stated that he is applying for new staff, it is just

that he doesn't need a change in the law to be able to do that. He already has existing authority to do that.

Mr. DuBois questioned the exemption on motion picture theaters and asked if they were pretty well protected now by exits. He noted that they were on one floor.

Mr. Weldon stated that he did not know. He further stated that he thought that Mr. DuBois would have to ask some of the people who would testify later - some of the technical people - I don't know.

Mr. Jeffrey stated that they removed the exemption on churches and theaters, but I think that is another policy decision that we are going to have to make. As far as theaters were concerned, the testimony before the subcommittee was that there has been problems with people exiting theaters - people pile up at the exits and they are overcome by smoke and that is the reason that we eliminated that one, even though they have fixed seating, but I think the policy decision we are going to have to make is whether churches and fraternal organizations should be exempt. I don't know how many of them would fall under the 12,000 square foot requirement, but I think that in some cases it could be a real hardship to require churches and fraternal organizations to retrofit.

Mr. DuBois asked if they felt that theaters were pretty well protected now.

Mr. Jeffrey stated that he really could not say. He stated that he did not know whether they are covered under the 1979 Code adequately or if the ones that have been built in the past are unprotected or not. I don't know how much of a retrofit program they have to get into. We really didn't have any testimony in that regard at all.

Mr. Weldon stated that under these amendments they would have to be sprinkled though if they were more than five thousand feet within a building of twelve thousand square feet or more.

Mr. Redelsperger stated that in other words we would get them out of the exemption.

Mr. Prengaman stated that the provision whereby local governments may adopt stricter standards sort of bothers me a little. What I am wondering is what happens if local governments want to bring these down to smaller buildings. What we are talking about here are basically fairly large buildings. If the local government decides that for one reason or another they want to adopt an ordinance calling for stricter measures for a smaller building than covered in here, we are taking away their power to do that.

Mr. Redelsperger stated that they have regulations now outside of this bill. This is strictly addressing itself to retrofitting and

they do have their regulations and ordinances already to take care of the problem - they already have the authority to do that.

Mr. Prengaman stated that suppose they want to put sprinklers in or if they want to do something else which isn't covered by any of their present local ordinances. In other words they want to make it stricter.

Mr. Weldon stated that the way this is worded, this restriction would only be required on the types of buildings and occupancies covered in this bill, so if they wanted to pass an ordinance that was stricter for types of buildings not covered here they could do it the way this is worded. The wording is pretty technical and I had a hard time even getting this many different factors in, but the intent was to say that they could pass an ordinance for retrofitting of buildings not covered here.

Mr. Jeffrey stated that there is no question that this is a problem area and it has been one that has been difficult to resolve. We felt that since it is strictly a retrofit bill and for new construction they could do anything locally that they wanted to do and be as strict as they wanted to be. That is why I say that that is a decision I think that the whole committee needs to make. It is a departure from the authority that local governments have to adopt an ordinance as strict as they want to. The industry was concerned that there might be a one-upmanship being played between entities. I really wasn't that concerned about that part of it but I think a fear that they had and that I shared was that we may require by this bill that everybody retrofit and that six months later a new ordinance would be adopted and that they may have to make changes again and I think that is what the real fear was.

Mr. Prengaman stated that in other words they want one standard to work under.

Mr. Craddock stated that he had had word just late yesterday afternoon that Clark County had adopted an ordinance more stringent in some instances than what we have provided for here. We have had some history of upmanship and competition in the housing industry in Clark County in the area of flood control. Mr. Craddock stated that he had had some second thoughts about what we had said yesterday and I did not talk to Jack about this, but we may elect to change the general provisions there to where local ordinances may not be enforced.

Mr. Dini stated that Douglas County had already adopted one two weeks ago.

Mr. Jeffrey stated that Clark County was working on one and he did not know whether that had been adopted or not -

Mr. Huddleston stated that it was adopted yesterday.

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Mr. Polish asked how far the committee had taken a look into the electrical field. He stated that he had spoken to Jack (Jeffrey) about this and that he had an electrical engineer that told him that there was real question with regard to the MGM and the new wiring and some of the plastic even in the conduit. He stated that he did not see anything in the bill on that.

Mr. Jeffrey stated that as far as the electrical problem is concerned they would be covered under the existing ordinances. They don't have anything to do with this bill. And I think as a matter of course, of course how far they get into the electrical, change of occupancy or change of use, is another question, but they do go through them. The problem in my mind and I don't know that the cause of the fire at the MGM has really ever been established, but the most common cause of electrical fire is due to improper grounding which are difficult to detect even on inspection of the building in change of use or change of occupancy. Unfortunately the way they are usually found is when there is a problem with them but if the electrical work is done properly and everything is closed off properly the fires should be contained in the box that it starts in. I was told, and this is strictly hearsay, that one of the problems at the MGM was that the those junction boxes were not closed and that they had been working on some of that stuff and left them open, but I don't know that that's the case, but that is the most common cause of electrical fires, but this bill does not address that problem. The local ordinances do.

Mr. Polish stated that his question was that almost by feeling and touching you can almost tell that a box had some heat there above normal.

Mr. Jeffrey stated that usually when you can do that in an inspection, the fire is about to break out anyway.

Mr. DuBois asked if the paging and alarm system could be described.

Mr. Jeffrey stated that he could tell him generally what it is. They call for one in each room and that is going to be an expensive proposition too and they are generally zoned so that they don't alarm the whole building and try to get everybody out of the building at once if it is not necessary, but it is communications in each room and that is basically what it amounts to.

Mr. DuBois asked if that was a loudspeaker. He asked if it would be a whole new system.

Mr. Jeffrey stated that he thought it would be and that it would be a system that most everybody would have to put in and that he did not believe that there were many of those in place now.

Mr. Dini asked if Senator Neal had any comments he wished to make.

Senator Neal stated that he did not have any comments because if you send the bill back it will probably have to go to conference

anyway.

Mr. Dini asked if Don Huddleston, the fire marshal, wanted to comment on the bill.

Mr. Huddleston stated that he would be glad to, however, you have a great many people in the audience I think that have input and perhaps I could hold my conversation until later and add to what they have to say rather than try to cover their areas of concern. Either way - I can sit down right now.

Mr. Huddleston, Nevada State Fire Marshal testified next. Mr. Huddleston stated that as he said you are going to have a great deal of discussion with people in the audience that have some concerns about portions of the bill. I have some concerns myself that I will voice with your permission. I think on page 2 of the draft outline I have, Section 2, it speaks to the question of the authority involved. In effect, it would appear that the subcommittee has seen fit to name the authority, or limit the authority for enforcement and approval on these items to the building departments within those jurisdictions and counties of 100,000 and more. I feel that in the number of years that I have been in the code writing and code enforcement business, that the more of a concensus decision making process you can have impacting decisions on impacting decisions on application of things of this nature, the better off you are. It's currently a practice within the local entities to require sign offs on plans and approvals by both fire and building departments. However you have by law restricted this type of authority to the building officials only. I have spoken with the building officials in the Washoe County area and also in the Clark County area and they are totally in agreement that it can well be written into this law and they have no problem with a joint enforcement effort being called out in the law. I would like to point out that in the instance of the MGM hotel, there was a good question at that time, at the time it was built, on the part of both the fire department and the building department on application of sprinkler systems in the casino portion of that facility and the fire department's advocacy at that time was that the 12,000 square foot rule for display area that was contained within the casino under the Uniform Building Code required sprinkler protection. The building official, despite two requests by the Fire Department, made an ultimate decision at that time that it did not apply. As a consequence, we ended up without the MGM casino being sprinklered. Obviously, after the fire when the question was raised within a National Conference of Building Officials on what that application should have been, they came back and said absolutely it should have been sprinklered under the 12,000 foot rule.

I think in that instance had we had some type of joint input, then obviously there was a stand-off there and we could have sat down and reached some kind of a reasonable understanding of that point through the advent perhaps of the International Conference of Building Officials at that point. So I think that type of concensus

decision making process is important and I think it takes all of the entities that are involved, subdivisions if you will within the entities, that are involved in the business to make those types of decisions so I would advocate that there be some wording here in these counties over 100,000 that would allow joint fire department and building department enforcement and ultimate approval of whatever plans are generated after this.

I guess in Section 4 as I move on down the page -

Mr. Craddock asked if Mr. Jeffrey would like to comment on that.

Mr. Jeffrey stated that he did not have any particular problem with who should be the enforcement authority, whether it be the building department or fire department. However, my feeling is that the surveys would be made basically based on the 1979 Code and the concern that I felt that we had was when we get into the areas like in Section 3 and we talk about equipping every exit corridor with emergency lighting, etc., and when we get into these things that are approved by the authority we felt that there should be one authority to make that decision ultimately. That was the reason we came up with building department because they will be inspecting the work on an ongoing basis as the work is being performed. It doesn't really make any difference to me which way it goes,

Mr. Jeffrey stated that as far as the enforcement is concerned of the fire code and the building code, I don't think that there is any doubt in my mind and probably in most people's mind that each entity will be authorized to enforce their own codes.

Mr. Huddleston stated that certainly whatever the pleasure of the committee is, I will live with that. The only comment I would have is that I would ask that you note that all of the items contained within this bill that are to be applied retroactively deal strictly with fire and life safety. They do not deal with building protection or building safety they deal strictly with fire and life safety and I feel like that is more properly the concern of a joint effort on the part of fire and building. That is my own comment.

Mr. Craddock stated that if his memory served him we have had some considerable difficulties and resistance toward usurping local authority in any form or fashion and my feeling was that the building department would probably would probably be more capable than the fire department on an ongoing basis to keep up with the modifications that were taking place and we might also note the escape valve that we have built in and that is that the local authority can by ordinance prescribe what Tom (Huddleston) is talking about if they want to.

Mr. Dini stated that the problem has been with enforcement. We probably wouldn't have had any problems in Southern Nevada, or any where in the State of Nevada if they had enforced the 1981

code they had there anyway. When they took the State Fire Marshal out of Clark County and Washoe County because the political portions did not want him interfering they caused 90% of their problems and that was done a couple of sessions ago.

Mr. Craddock stated that he would do something he rarely does, and stated that he would respectfully disagree with Mr. Dini.

Mr. Huddleston stated that he guessed his other comment would be in Section 4 and in subsequent sections where they have added condominium I have no problem with it and I think the protection should be there and I question the enforcement aspects of trying to apply these things retroactively to a condominium since it is somewhat constitutionally protected as a private residence, I can foresee the potential if you will for the authority whatever that may be having to get administrative warrants from a judge in order to be able to get into a private residence to see whether or not in fact these things have taken place and whether or not they comply with the law. That would be my only comment toward that.

I think the change is good under Section 5 on the smoke detectors as far as the approval of placement simply because in a situation where you have apartments or in the event of condominiums you do not necessarily want those detectors placed within the sleeping room itself. That certainly is true where you have a one room situation in a hotel, motel or something of that nature in the event that you have a larger unit involved, a dwelling type unit with several rooms, the advocacy for placement under N.F.P.A. 72E is that those detectors be placed in the corridors outside or leading to the bedroom areas in the path of air exchange so that they can be a little quicker to trigger an alarm as opposed to waiting until the smoke has infiltrated the bedroom itself before setting off that alarm so I am totally in agreement with that.

Mr. Huddleston stated that generally speaking he had covered the areas that I am concerned about. I would point out that under Section 10 where they have deleted items 1 through 6 I can only say that those items as considered by the Governor's Commission on Fire Safety Codes were essential to this program for the long range ramification of giving consideration to new technology and finding methods for developing for more adequate or succinct enforcement practices and as an aid to both state and local jurisdictions. These functions are not performed by my advisory board. My advisory board at this point primarily acts as a hearing board if you will for industry disputes on the industries that we regulate and give me advice upon policy in dealing with the day to day working of the office. They have not functioned in these other areas and that is one of the reasons the governor's commission on fire safety codes advocated those duties to the Boards. Certainly whatever your pleasure is.

Mr. Huddleston stated that he did not think that he had any other real questions with the bill at this point other than what I have

stated and I would be glad to try to answer any questions you might have.

Mr. May referred to page 1, line 12, immediately provides adequate facilities. How do you interpret that immediately as adequate?

Mr. Huddleston stated that the intent of the commission when they advocated that particular wording was for the type of situation that the enforcement authority gets into when they go on a premises and they can find anything from doors changed or blocked, blocked by tables, blocked by bus trays, or inadequate seating arrangements for example in a showroom or something where there has been something usually some physical obstruction moved into the path of exit so that they had the right to go in and immediately demand that whatever methods be taken, whether that involves simply moving some furniture around or whether it involved in some instances some physical change to that facility at that time that they at least start the process for getting adequate exiting in there on an immediate basis as opposed to perhaps a 30 day notification process which really does not meet the requirements for immediate life safety that is involved in exiting patterns.

Mr. May stated that the bill of course is written to be effective on passage and approval but the appropriation doesn't start until July 1st. What do you anticipate doing for the rest of May on the anticipation that it would apply some time this month - May and June.

Mr. Huddleston stated that it is going to be a real problem. If in fact additional personnel are brought aboard by virtue of appropriation, we are going to have to start to identify candidates, get them in and get them trained as quickly as possible. Obviously we can set up the process and have everything ready to go so that we can start the hiring process on July 1. Outside of that we are really dead in the water until some time around August or September because even after we get the people aboard it is going to take us a period of time to get those people trained and ready to go out in the field even if we keep their training at this point totally simplistic and point it strictly toward this bill. It is still going to require a generated amount of time to get those people qualified to go do the work. So we have a real lag time there. I anticipated that in the fiscal impact note and asked for two plans checkers in addition to the staff, if you will, the staff and clerical position to serve this board itself. Two plans checkers and two deputies to try to keep up with the workload and we anticipate even at that that the two deputies are going to have to manage even to get through and survey approximately seven to ten towns a month in the remaining time period in order to adequately address the problem within the time frames we have been given.

Mr. May suggested that perhaps State Personnel could get those people in and perhaps interview them.

Mr. Huddleston stated that they have tried to anticipate as much of that as possible and get the procedure set up with State Personnel. Approximately at the outside, we are hoping no more than a two month lag time which would take us on in. Hopefully we can everything set up and ready to go even to the extent of having the testing done and perhaps be down to the final selection of candidate process close to that July 1 date so that we can immediately bring them aboard and go on with the program.

Mr. Prengaman stated that if he understood Mr. Huddleston's comments about the deletions in Section 10, you have a broader view of what the Board should be doing. In other words, it should not be just a retrofitting Board, it should be a Board which examines for instances architectural changes, other areas such as schools, am I correct?

Mr. Huddleston stated yes. It was the feeling of the Commission - the Governor's Commission on fire safety codes as we went through the problems that number 1, the time constraints were such on that commission that they did not have time to adequately address all of these areas, and particularly the areas of how you identify a vehicle for incorporation of new technology to deal with the problems that we see in these facilities on a day to day basis. We have been absolutely diluged since the MGM and the Hilton disasters by probably several thousand outside interests that either have inventions or have some product that might have some innerface on the problem and we feel like there should be some identified vehicle in terms of this Board to try to digest some of that information and at least give somebody some input on which direction they think we should go. The same holds true with the development of programs, everything from public education programs to consideration of some other facilities that were not addressed that may have just a serious ramifications in terms of fire safety as the facilities that the Board was able to address within their time constraints, and they felt that overall these other duties were probably as important to the ultimate ability to rectify the problems that we have found as the advocations in the bill itself for the physical protection to take place in the next three or four years.

Mr. Prengaman stated that the Commission identified schools particularly as an area in developing fire safety programs and I am just wondering why. Aren't they covered now. Don't your fire departments routinely check schools and hold fire drills.

Mr. Huddleston stated certainly and absolutely and they do an excellent job. I think that overall with department budgets having the constraints they have and certainly on the state level it is has been a rather disjointed effort and we are not sure that all of the best ways of going about accomplishing that type of education if you will to the public. Certainly schools are one way to do that. We try to start the kids out and get to them in kindergarten, first, second or third grade

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and then take them on up through at least until they start in the junior high school with a year by year education if you will of awareness programs. I think there needs to be some type of joint effort to look at this thing and try to identify it perhaps by some more successful vehicles for perhaps imparting that education so that we can not only to schools but to the general public and certainly there was an advocation within this commission for this particular Board to take a look at training programs for operating staff within the hotel facilities for example and some of the other areas including perhaps even to the fire services of the building departments themselves in terms of identifying resources and the availability of new programs that can have an impact on the overall problem.

Mr. Craddock asked Mr. Jeffrey if he made a mistake in expressing his own feelings on this for Mr. Jeffrey to please express his own opinion on this.

Mr. Craddock stated that his feelings when they reviewed this was that this was the responsibility of more property belonging with the fire chief and the fire authorities on an ongoing basis rather than -

Mr. Jeffrey stated that we felt that the bulk of the work that this Board would be doing would be the variance requests and there wasn't anybody - there was no opposition to the proposal we had in committee although Tom was not there, but we felt that again and I was under the impression that these areas could be under the present law covered by the advisory board and if they can't be, then maybe they should be, but I don't see any reason really for two boards performing functions that are in my mind duplicated and if we are going to get into this area then we either ought to do away with the Advisory Board or we ought to expand their duties or whatever. But I don't think that we should have two boards on an ongoing basis doing basically the same type of work. If this board needs to be a permanent board, then we ought to consider getting rid of the advisory board.

Mr. Huddleston stated they have a problem with priority and we have a problem with invitation by local authority to come in and evaluate that process and I don't blame them for that at all.

Mr. Huddleston stated that please understand that this advocation comes from the entire commission and was not my advocation and that was the feeling of that commission after they studied the available relevant material. I might point out that the local authority was represented on that commission so it certainly speaks for itself.

Mr. Redelsperger stated that he just might add that we have some time restraints here and this board is going to be quite busy and we have got to get everything taken care of in a four year period and if we start going off into all of these other areas we are not going to take care of the primary problem which is retrofitting.

Mr. Prengaman stated that he would just like to comment briefly that he thought that what has happened in Nevada in the past couple of years demands more of a commitment than just retrofitting. It requires an ongoing evaluation and I am not sure where it belongs whether it belongs in the existing advisory board or whether it belongs in this board that we are setting up. Hopefully if we don't adopt it now, by 1985 the legislature again will ask the question of whether we are doing it or not - it is just my opinion that we have to do more than just retrofit. We have to have some sort of ongoing evaluation.

Mr. Craddock stated that he would like to respond to that if he may. He informed Mr. Prengaman that this retrofitting is a separate project and you know that local governments are restricted as to what they can do. Mr. Craddock stated that safety to him was a relevant term and there are some evaluations that have to be made and if we look at the statement of some of the gaming establishments and recognize that they have done up to this point in time a good job as relates to fire safety in spite of the fact that we have had a few bad accidents we have still done a good job. We are trying to put together something that can be absorbed by the industry. This is the unhappy balance that we are trying to reach.

Mr. Prengaman stated that he guessed it boiled down to your faith in local governments.

Mr. DuBois asked Mr. Huddleston on the matter of condominiums take the case of a high rise like say the Jockey Club in Las Vegas where you have 14 or 16 stories. Wouldn't that be a tremendous physical problem. You have all of these common walls and every unit is individually owned, everyone is contracting on his own for their own separate system, wouldn't it be extremely complicated to bring the pipes up the high rise?

Mr. Huddleston stated that in that particular instance it certainly would be. However, I think in most instances when you have condominiums you have some type of an association that has overall responsibility and coordination of whatever takes place and it usually requires the concurrence of that association or a form of that association for whatever changes take place within the condominiums themselves. In other words, certainly on that type of basis whether or not that applies in all instances I really couldn't say and certainly if that were the case where you ended up with the situation of each individual condominium owner contracting separately for his own system, then certainly you've got more problems than you can handle. It would not necessarily be a practical way to approach it.

Mr. Jeffrey stated that as far as the condominiums are concerned we may have a problem and it never came up in the subcommittee when we get into each individual unit but I don't see a problem in the commonly held areas and those are the areas that this bill primarily deals with. As far as smoke detectors in those units,

that may be a problem. As far as the sprinklers inside the door to protect the exits that may be a problem, but the corridors and lobbies and areas held in common should not be a problem. It just never came up in the subcommittee and we may have to address the individual ownership problem but the common areas in all the condominiums that I am aware of are held in common. They are not privately held.

Mr. Huddleston stated that probably the biggest impact would be this portion that requires retrofitting of those units with voice communication potential.

Mr. DuBois inquired about town houses.

Mr. Jeffrey stated that town houses would probably be exempt because most of the ones that know of have only two stories. We did feel that town houses were covered under the condominium section, but they would have to be three stories to come under this bill.

Mr. Dini asked if there was any further testimony. He asked that the comments be confined to S.B. 214 and the amendments to A.B. 505.

Mr. Vern Balderston, the Business Representative of Local Union 669 of the United Association, A.F. of L., C.I.O. Plumbing, Pipe Fitting and Fire Protection Industry of the United States and Canada testified next. He stated that he has been associated with automatic fire protection sprinkler systems for some 25 years. I have obtained much knowledge and documentation in that period of time. I think it is a shame that too often in this country, many people die at a major intersection until the officials have a stop sign put in place. I think the same thing is happening in this country in our fire traps where automatic fire protection systems should be installed and I can cite you some statistics that will support my feelings. During the Viet Nam 10 year conflict we lost 45,950 Americans. However, during that very same 10 year period we lost 143,550 Americans to fire, and an annual fire loss property damage in excess of \$14,000,000,000, and incidentally there has never been a single fatality in a totally sprinklered high rise structure and 98.6% of all such fires have either been extinguished and/or controlled by the time the fire department arrives. I might interject that the A.F. of L. C.I.O. did an extensive study recently and concluded that the firefighters and fireman had the most hazardous occupation on earth. Fire sprinkler systems not only save lives. They save the owners large sums of money due to a reduction in their insurance rates. They also save the taxpayers millions of dollars as a result of a reduction in fire departments, fire fighting equipment and fire fighters needed to serve the community.

I have a letter that is a classic example. Mr. Balderston stated that this letter is for immediate release regarding automatic sprinklers in Downtown Fresno. A copy of this letter is attached to the minutes of this meeting as EXHIBIT B. Mr. Balderston read

the letter to the committee.

Mr. Balderston stated that most of us are aware of some of the fires that have happened in the past several months and it is my understanding that most of these have been equipped with smoke detectors. The Nursing Home Fire, the MGM Fire, the Hilton Fire, the Stauffers Inn Hotel Fire, the Nursing Home fire in New Jersey, the Viet Nameese Childrens fire in Salt Lake City, Utah, the Inn on the Park Hotel fire in New York Ontario, three separate Holiday Inn fires, the Beverly Hills Supper Club Fire and many more. The point that I wanted to make there was, that I also have a copy of the report from the Edmonton City Council. It is a very comprehensive and dynamic report. It is a comprehensive study on human behavior in fire situations; it deals with track records on fire suppression systems and also it deals with track records relating to smoke detection systems. Mr. Balderstan quoted a couple of exerpts from this report, which is attached to the minutes of this meeting as EXHIBIT C.

Mr. Balderston stated that the extensive studies that have been done on those buildings equipped with fire protection systems have been outstanding - their track record. However, the track record on smoke detection systems in multiple situations has been very dismal. The quote from the National Fire Protection Association states that detection equipment neither protects fires nor does it put fires out. In North America sprinklers have been successful in controlling or extinguishing 96.5% of fires in such buildings. In Australia and New Zealand where sprinkler systems have been in use for the past 82 years, records show that 99.5% of fires in high rise buildings were controlled or extinguished by these systems.

In concluding, A.B. 505, I take issue with some of the proposals in there in contrast to S.B. 214, where it restricts the local authorities from providing a more stringent application for fire codes than does A.B. 505. I question the application of that.

In closing, the final question is: When will there be a mandate to implement the installation of automatic fire protection sprinkler systems to stop these needless deaths and I would be glad to entertain any questions.

Mr. Schofield referred to Mr. Balderston's reference to smoke detectors. He stated that there was some testimony the committee had heard when they first heard S.B. 214 concerning the temperature that it would take to activate the sprinklers under that automatic system. By the time the temperature got that way because of the heat, any lives in there could have been lost.

Mr. Balderston stated negative and that he took issue with that because there are several different types of sprinkler heads with fixed temperature ratings and it depends upon the occupancy

and the hazard involved.

For example if you are in a cleaners where the temperature is already 180 degrees the sprinkler heads would probably be set at 212 degrees and/or 250 or 286 degree temperature rating. However, in an ordinary occupancy such as we are right now, the temperature of that particular head may be set at 135 degrees or 165 degrees and when the temperature reached that temperature, it would fuse that particular sprinkler head and as a result it would extinguish the fire.

The temperatures in the MGM fire as I understand reached in excess of 2,600 degrees. Now the portion of that building between the casino and the tower that was provided with fire sprinklers did in fact stop the fire from proceeding to the tower even though the smoke filtrated on through and killed 86 people. The impact of those sprinklers was very dynamic inasmuch as there was one room with two sprinkler heads in it. They measured the temperature on the outside of that room of 2600 degrees. The inside of that room had hardly any damage whatsoever to the wallpaper other than water damage. Both heads were fused and this is just one of the impacts that the sprinkler affords. I believe and I am convinced that if that building had been properly sprinklered we would not be discussing this now, because the sprinkler would have went off and it would have put the fire out and we would have been just like the Harrah's Hotel situation. The sprinkler put that fire out and I think it barely made the news media. Had there been no sprinklers there it would have made the news media because several people probably would have been succumbed and inflicted by injuries as a result of the fire.

Mr. Schofield stated that he thought that the most important thing that Mr. Balderston was addressing was the saving of lives.

Mr. Balderston stated absolutely.

Mr. Schofield stated that this would also include the possible fire protection.

Mr. Balderston stated that he has had some experiences with smoke detectors and I can give you a relative example. In two different situations right here in Reno, Nevada we had people come in from out of town and they are not too much different from other people that come in here and gamble for an extended period of time - day and night sometimes. He advised us to wake him up the following morning so that we could have breakfast at 7:00 A.M. We rang the phone and let it ring and ring and ring. No answer. So we went and beat on his door and then we assumed that he had already gone to breakfast. We proceeded to breakfast and he was not there. Later, as our meeting started he came in and gave us kinds of heck because we didn't wake him up. These are some of the situations that you will face in a smoke detector alarm situation. Especially in the State of Nevada.

Mr. Balderston stated he had one more thing to emphasize. I hear additional reports from various communities that we need more firefighters and more firefighting equipment. I have some photographs that were taken within two blocks of a major fire department that was manned 24 hours a day, seven days a week, three hundred and sixty five days a year and these buildings were fully engulfed and consumed by fire. If you would like me to pass these around, one is a major fire at which one of the firemen in this particular case died in this particular fire. Mr. Balderston stated that this was just a point that he wanted to emphasize that even though the fire department is within three blocks, it does not answer the question of well we've got a fire department there and it will put the fire out. Mr. Balderston stated that that was not necessarily true. He passed the pictures out to the committee for their perusal.

Mr. Brad L. Huberger, one of the owners of H & S Fire Protection testified next. He stated that for obvious reasons he would like to see this bill passed, but beyond that, one of the biggest problems that I would like to bring to your attention right now is the restriction that the local authorities have on jurisdiction of adopting the code above and beyond what this 501 wants to bring up. I feel the local authorities under your UBC, your national fire code, right now they are the ones having the authority. I feel Tom Huddleston's office should still have the authority and I think the local fire department should have the authority to go above and beyond. They know the fire traps. Say there is an 8,000 square foot building, fifty years with no conduit and it is not brought up to code, it is a complete wood structure and they should be able to adopt the ordinance within their area. This is my feeling, to be able to bring it up to code or make them retrofit that particular occupancy. Another problem that I have run into and we are going to see it happen more and more especially if this bill was to pass is you do have a local authority having jurisdiction. I did a small job down in Candelaria Silver Mine. The local authority having jurisdiction was the only one that approved this. Here is a man sitting a volunteer fire department who drives the ambulance for the government. He looked at them and said these are beautiful. Where do you want me to approve them. He said this is the first set of sprinkler drawings he had ever seen. I feel that they should have gone through Tom Huddleston - someone that knows what they are looking at, someone that knows what they are doing because more and more people are going to try and jump in on this and there will be a lot of sprinkler contractors coming out of the woodwork and there will be a lot of plumbers that work out of their garage and have a pick up and they can thread pipe and they will start to put systems in. I feel it is a good idea that we do have a committee and we have someone that can review these drawing and come up with the recommendations, but I don't think it should be restricted to 501 or to Tom Huddleston. I feel that the City of Reno, the City of Sparks and Douglas County want to adopt stricter codes then what this law is asking for, I feel it should be left up to their jurisdiction also. As far as some of the other codes and other problems that we are running into,

the condominiums, I feel that Douglas County must adopt a mandatory sprinkler code for condominiums. Under this bill, if I understand it, they can get by with a life safety system - corridors and a head in each room. If Douglas County says we want to totally sprinkler the building and will not accept a life safety building, they point out well sixty percent of your fires are somebody smoking in bed and we want a head over the bedroom and not just over the exit - not just over the corridor - we want to control that fire with the first head - about 98.5% of those fires are controlled with the first head and about 95% of them are out when the fire department arrives. I feel that since he pretty well has his mind made up that is what Douglas County wants. I don't feel it should be restricted to only a life safety code. For obvious reasons and because of being a sprinkler contractor and owner and a sprinkler company I would like to see this passed. As far as any other ordinances, I would go along with them 100% but I feel the State of Nevada has a black eye now from MGM and Hilton. If non-trained and non-skilled people get in there without having the proper authorities checking their plans, the local authorities checking their plans, the state fire marshal with plan checkers that know what they are doing checking the plans, my industry is going to end up with a black eye also and we will all look bad, especially what would happen if a prinklered building burns because of not being properly sprinkled. That is going to hurt us all.

Mr. Dini asked if anyone who was here from Local 669 wanted to testify too?

Mr. Bruce Kanoff, Tahoe Douglas Fire Chief testified next.

Mr. Kanoff stated that the Tahoe Douglas Fire Protection District supports retrofitting of sprinklers for fire protection in casinos, high rise hotels, office buildings and condominiums. We feel it is imperative that such retrofitting be accomplished to NFPA Standard 13 which is fully sprinklered. This provides the building owners with the mechanism of recovering their installation costs from reduced insurance premiums while providing the greatest known degree of safety to the occupants of those buildings. The retrofitting as detailed in A.B. 505 does not provide the building owner with the mechanism to recover installation costs through insurance savings nor does it provide the greatest known degree of safety to the occupants, nor do we support language in any legislation that prevents local code adoption and enforcement. Each county area or district has its own special problems and must be dealt with locally. Douglas County has amended their sprinkler ordinance to include retrofitting of sprinklers for fire protection in high rise buildings. Our winter weather precludes speedy response when time is of the essence, and in accordance with the recent tax relief legislation, it is important that fire protection costs in these high rise monsters be transferred from the public to the private sector.

We feel the local code enforcement is of great importance. We have

ski lodges for instance that are on top of the mountain and we have condominiums that have been built that we are currently enforcing retrofitting of sprinklers in. We would hate to see this lost. I think this applies Statewide. All areas or districts have their own special problems that have to be dealt with.

Mr. Dini asked with regard to the Douglas County Ordinance that was just adopted a couple of weeks ago, how much time did you give everybody to get retrofitted.

Mr. Kanoff stated that they gave them one year from the date after the adoption of the ordinance which goes in effect - the final publication on that ordinance is tomorrow, so they will have one year from tomorrow.

Mr. Dini asked when Douglas County considered the ordinance, did they consider the fiscal impact?

Mr. Kanoff stated yes and that they talked to all of the people concerned in Douglas County, that is the major casinos and they agreed and put the money in the budget. In fact, one of the casinos involved agreed to bring the building up totally to the 1979 Uniform Fire Code. They have exceed our ordinance actually.

Mr. Dini asked what the ordinance was based on, 1976?

Mr. Kanoff stated no it is based on 1979 UBC.

Mr. Kanoff further stated that Douglas County has adopted the 1979 UBC Code. The amendment to the sprinkler ordinance only dealt with retrofitting of sprinklers in those high rise buildings. We have applied it in some condominiums. We have a lot of condominiums up there that are being converted into time share units. Instead of having four occupants in a four-plex, you will find that you will have one occupant per week for fifty weeks out of the year and the other two used for maintenance and some of these are on ten foot narrow roads that may or may not be plowed and with the great use of them, we are finding that two parking spaces per unit is just not adequate. We can't get apparatus into them so we have requested that these units be retrofitted with sprinklers. We would hate to lose that particular section of the bill. We would hate to see any legislation that prevented local governments from enforcing their own code, especially since our budget is going to get cut \$125,000 this year from our tentative budget and that isn't going to allow for any more firemen and we will have to rely on the public sector picking up some of the fire protection costs, or rather the private sector picking it up from the public.

Mr. Dini stated that he thought that were picking it all up anyway. They are paying the taxes.

Mr. Kanoff stated that is true but once you put the fireman on the

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tailboard his costs continue to escalate every year. The sprinkling system is a one time cost to the builder and it actually precludes you from increasing your fire staff. If you can get everything sprinklered you can reduce as they did in Fresno, you can reduce the number of firemen so it does actually reduce the cost to the public. It passes it to the private sector as a one time cost.

Mr. Dini asked how much it would cost to retrofit the casinos up at Stateline?

Mr. Kanoff stated that surprisingly some of the bids that I saw come in weren't as high as we had figured. In the case of Sahara Tahoe which has two towers, I believe it is around \$350,000. We had figured it would probably cost them up to \$1,000,000. It is hard - you can't really base it on square footage cost. You have got to take each individual building as the ones in Tahoe were built where the floor is the ceiling, for instance, in Harrah's, because of the TRPA's height limitation on the building, so they are going to use wall pendants. We have this ordinance in and the casinos are working on it and are getting bids. Harvey's was completely retrofitted.

Mr. Nicholas asked if Mr. Kanoff could tell him where he was putting the sprinkler heads for example in the Sahara retrofitting. Are there stipulations for just one head inside the door?

Mr. Kanoff stated no that this was in accordance with NFPA standard 13 and it would be fully sprinklered. The heads will come out of the hallways in which the ceilings are generally dropped and will come into the entranceway in the bathrooms and there will be flush heads in there and then they will go out on wall pendant heads. My suggestion to them was that they not attempt to hide the pipes but they paint them bright red and advertise that they are sprinklered, because I think that people are beginning to pay attention to sprinklered buildings.

Mr. Nicholas stated that he had one last question again as to the Sahara, are they having to deal with all floors above the main floor?

Mr. Kanoff stated no. The second floor is their convention area and it is currently sprinklered. The basement through the second floor in all of the casinos were sprinklered. The Sahara is dealing only with the tower from the third floor up.

Mr. Nicholas asked if Mr. Kanoff knew how many rooms were involved.

Mr. Kanoff stated it was three hundred and fifty some rooms.

Mr. Balderston asked if he could interject one thing. The fact that a building is totally sprinklered will probably reduce that insurance rating and save the owner anywhere from 20 to

60% of his net annual liability.

Mr. Redelsperger stated that there is nothing in this bill that would preclude him from sprinklering that whole room. Mr. Redelsperger stated that we were concerned if they were solid concrete and had to drill in with one sprinkler but as he described it they could come into the bathroom and run the pipes on the ceiling, if they can go ahead and sprinkler it and save some money, they have the option to do it.

Mr. Jeffrey stated that we discussed this in the committee and felt that most of the major hotels would probably choose to be wholly sprinklered because of the cost savings. They are going to be into the room anyway. Then the question is and we were concerned about life safety primarily is getting the people out and we felt that most of the major hotels would probably sprinkler the rooms in order to get into cost savings with insurance but in other areas where they are all concrete and I know of several that are it would be very difficult but that is a decision that they would have to make at that time.

Mr. Craddock stated that there is a shortage of time to make any personal investigation, even if we had the data we wouldn't have sufficient time to go through everything we had, but we are led to believe, and I firmly believe that there are areas where the adequacy of the water supply is in question.

Mr. Balderston stated that they have a storage facility for those water systems called a tank.

Mr. Jerry Adams representing the Nevada Hotel and Motel Association testified next. I would like to go to the general portion of the bill that says that this is only for retrofitting existing buildings. Any codes and ordinances that can be mandated into new existing buildings are probably being done so right now and again going back to this, this is only applying to retrofitting. We support the majority of the bill and we would even like to point out also that the bill is addressing itself, in Section 3, to getting the people out after there is a problem with the emergency lighting and sealing out the areas that are involved in fire with the self improved closing devices. We also addressed alarm systems which again addresses to the people that there is a problem. The mandate to have smoke detectors in accordance with the sprinkler system in the room and what we are talking about is basically the average hotel room is less than 150 square feet so we are addressing the fact that if we are going to have a problem it is going to be in the bedroom and the early warning with the smoke detection is going to be working also with the sprinkler that is in the room and the comments that Mr. Jeffrey made that the Hotel Association has tried in Nevada to keep up with the trend and I was with the fire department in Incline Village for several years and I know we had very little problems bringing any life safety problems that we brought to the Hotel Association or the

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managers because that is their business and they have to take care of it. We adopted ordinances that again addressed the fact that we have interior finishes of lowest combustibility and lowest smoke production on any of their remodels so these are things that the industry is doing that not everybody is against this. We would go one step farther with at least one sprinkler above the door and instead of protecting the door, coming out into the room and addressing the fact that the majority of your problems are going to be in the bedroom at the bed or in that area. You have go, on an average in an occupancy like that, less than 10 pounds of combustibles per square foot and those sprinkler heads are designed to react to say 135 to 165. If you have the smoke detection previous to the head being set off you have a double safety standard there. You have protected the hallway and you have the paging system in there to warn occupants of problems next door or down the hall or whatever. Again you are addressing the situation and you are trying to get the people out and minimize any life safety. You are taking care of the hallways in the bill. You have taken care of your assembly rooms and again this is 505 I am talking about.

I think what we have to take into consideration also is that this is providing minimum life safety for sure but it is something that we can do again in retrofitting buildings. With the new buildings that are being done and I think all of the attention that has needed to be brought to these codes and ordinances or adoptions thereof, I think Nevada is probably ahead of the community or the country because our buildings are newer and we don't have so many - take California, they have got 100 year old buildings down there. The majority of our buildings are fairly new. They are sectioned off and we already have some of those life safety factors involved so if we do go back to the basis of this whole bill and that is the retrofitting part of it and deal with that only and not try to get so much involved in it and then maybe not even get the thing passed to be applying to the existing buildings. I think that is the important thing of this bill.

Mr. Dini asked if there were any questions.

Mr. DuBois questioned Mr. Adams and asked if he had spoken about the paging system.

Mr. Adams stated that it was addressed in here.

Mr. Adams stated that he thought it was good and it allows the notification of anybody that is not in an involved area that there is a problem.

Mr. DuBois stated that the hotels that have gone through this retrofitting in South Tahoe are they putting in paging systems?

Mr. Adams stated that he is not familiar with South Tahoe but that

he was with North Lake Tahoe.

Mr. DuBois questioned the hotels in North Lake Tahoe.

Mr. Adams stated that in North Lake Tahoe they had a paging system on all floors and you can direct any information to any particular floor - it is not an all call. If you say you have a problem on the seventh floor you can address the seventh floor.

Mr. DuBois asked if this was in the corridors.

Mr. Adams stated that the ones that we have now are in the corridor.

Mr. DuBois asked if that was effective in reaching people in the rooms.

Mr. Adams stated it has in the past, but I noticed when I was talking to Mr. Huddleston that the reference to the State Fire Marshal's bill was that it would be in the rooms.

Mr. DuBois asked if Mr. Adams thought it would be necessary to have them in the rooms.

Mr. Adams stated that that would be on a basis that they would take on each individual building, because if you can address the people on a floor by the corridors and they are responding to it then maybe they would not have to go into the rooms. It has worked for us there.

Mr. Redelsperger stated that he would just like to add that if you have eighteen stories or so and the alarms go off and everybody starts coming down the stairs at the same time, you have congestion and it is a hazard. This way, through the intercom, they can just notify the people on that floor and the floor below it and above it, and they can get out and get out of the fire danger.

Mr. Adams stated that you have to control your access or the fire department's access also. If you've got everybody coming down those corridors or those stairwells and the equipment is trying to go up it does impede the fire department capabilities.

The committee took a five minute recess.

Mrs. Barbara Kahnle, a concerned citizen testified next. She stated that she wished to voice her support of S.B. 214 for the purpose of saving lives. Sprinkler systems estinguish fires and save lives whereas smoke detectors do not. I know none of you want another MGM fire to disgrace Nevada again and to rob the casinos of any more revenue. Any fire expert will tell you the more complete sprinkler systems the more lives will be saved, especially above the fifth floor. I would just like to add, please give us the sprinkler systems we need.

Mr. Robbins Cahill, representing the Nevada Resort Association, testified next. He stated that Mr. Higgins who has testified before this committee and representing the Northern Gaming Industry Association and I are very closely associated and I think any representation we make here can be made on behalf of both of us. Mr. Bud Schweitzer at my right is the technical fire consultant for both the Gaming Industry Association and the Nevada Resort Association and I think we rely on him for the technical aspects of this bill. He has testified before this committee and other committees including the local committees and I think he has some observations.

In conclusion, I would like to make this brief observation.

Mr. Bud Schweitzer stated that one of the problems that has been addressed here today that I think is very pertinent both to the local authorities and to the gaming and hotel industry is the general statement to the effect that local entities cannot impose any stricter measures than are encompassed in this law, A.B. 505 if it is passed and I think that there are some very legitimate concerns on both sides of the fence regarding this. The local entities are concerned about their economy and the possibility that they may recognize needs that have not been fully addressed either in this bill or by the governor's committee and I think that the Gaming Industry and the hotel owners are concerned about the fact that we do have to have some limits and some uniformity as to what is going to be required in the way of retrofit fire protection. While this statement does give the local authorities an option of going to the legislative commission for any requirements they may have which exceed the requirements stated in this bill that may be in their opinion a little bit unwieldy I was going to suggest that what might be more acceptable to both sides would be that if a local entity had a concern or problems they felt needed to be addressed, that instead of going to the legislative commission if they could go to the Fire Safety Board that is being established as a part of A.B. 505, it may be a way for them to get an answer more quickly and be less unwieldy than having to go through the legislative commission, and I think that this arrangement that has been indicated to me that this arrangement would be more acceptable to them and would certainly be acceptable to the owners because it is a board of appeal that would work in both directions for the owner or for the fire authority having jurisdiction if there were a problem that could not be resolved any other way. I think that the other question might be addressed was one that Mr. Craddock mentioned a little earlier and that is that as this is now written, it says that local entities may not adopt an ordinance which requires stricter measures. We know that there have been ordinances previously adopted which do have stricter measures. Clark County had one yesterday. We know that Douglas County's testimony here has indicated that Douglas County has one and for the sake of clarity I think that if this provision is going to stay in the bill, it should probably read that State and local

entities may not adopt an ordinance which may not adopt or enforce an ordinance which requires stricter measures and I think this would then take any ambiguities out of the statement so that if there was an ordinance in effect we would not have a problem with that ordinance being enforce because it had been adopted prior to this so I think that both of these items are worthy of some consideration and that they will remove some ambiguity and I think that appeal to the fire board instead of the Legislative Commission would be a more acceptable alternative although I am not speaking for the fire and local authorities. It has just been indicated to me that this might be more acceptable to them.

Mr. Cahill stated that he merely would like to voice some of our concerns with you, not that we have any absolute solutions, but we might share them with you and possibly get a better resolution than we have now. I think that we should recognize this as one of the areas between State and local governments to where there is a little duplication where most areas of State and local areas are pretty well defined and we recognize them. We recognize that local government has certain functions to perform. I have been a part of local government and I recognize their problems. On the other hand this is also a concern of the State. In our industry, we happen to be in that position also in administration of the gaming laws, so we have had a little exposure and experience with it and our concern primarily is not what has happened at present, but the fact that I think it should be recognized that our industry particularly and many others in a similar position are kind of in between the two governments. In other words we have a dual exposure or even possibly which is not shown at this time, a dual jeopardy and we think that there are some ways that we can get at this and hopefully come up with some sort of a solution that will solve this to some degree. While I haven't had completely to Clark County's ordinance that was just passed yesterday, Douglas County's ordinance was passed a couple of weeks ago, but I have the distinct gut feeling that the people involved can live with both of those ordinance although they are more restrictive than the present consideration on the State level. Our concern because we do have a dual exposure, is possibly with what might happen in the future which is always a concern of ours and we feel that if possible some sort of a cap or some sort of a protection should be provided for to see that the possibility of one upmanship which has not raised its head at this point, might exist in the future and there should be some sort of cap on the activities and the ordinances of local governments beyond the ones that they have covered to this point. That is basically our concern. I might request or suggest that possibly if we had a little time, not too much time, recognizing time elements in the session, possibly that if Mr. Schweitzer on our behalf could get together with the local people involved and maybe your subcommittee and see if there is any possibility more to the satisfaction of both areas, because we think that in both areas there is a genuine concern. Maybe we could work this

out. Maybe we could work it out as Mr. Schweitzer has brought up - further restrictions beyond those that are adopted now could be mediated in this fire and safety board or something of that nature. If we could just get some restriction of caps and some assurances as to what might happen to us in the future, I think this problem could be worked out.

Mr. Dini asked Mr. Cahill if the industry has made a survey of the insurance savings and liability savings.

Mr. Cahill stated that he thought that Mr. Schweitzer could probably answer that better than I could.

Mr. Schweitzer stated that some of the individual owners have done this and have elected to go ahead with a full sprinkler system. As earlier testimony has stated there is an insurance saving and it is a way to amortize the cost of sprinklers over a long enough period of time. The amount of savings is not uniform throughout the State or throughout the industry. It depends upon the fire department that is responding, the national board classification of your city, the adequacy of your system that you install and the type of construction of the building that the system is being put into and what type of function goes on in that building so there are a lot of variables so you can't make a general statement saying that it is going to reduce it by "x" percentage of "x" number of dollars.

Mr. Cahill asked if that saving wouldn't be spread over quite a long period of time.

Mr. Schweitzer stated that the saving goes on as long as your sprinkler system is there and is operable and the savings continue so that hopefully over a long enough period of time any system would be amortized. I have seen systems that were amortized in less than two years. But that is not the norm. The norm is probably closer to 12 years - or 8 to 12 years - I would guess.

Mr. Cahill stated that another thing in that area that he thought might be pointed out that may have been pointed out in some of these committees before, is that in considering the cost of a sprinkler system particularly to our industry, there is a business interruption factor there. In many instances, this exceeds the original estimate of the installation of the system itself because of the nature of the gaming business and because of the interruption that goes on in installing these systems. Sometimes the cost is greater than the initial cost of providing the system.

Mr. Craddock questioned pending legislation in congress. He asked if there was any update on that.

Mr. Cahill stated no, but that he thought that Jerry was getting in contact with Senator Cannon's office who is sponsoring this legislation.

Necessarily, from all we can find to this point, the processes in the Federal Government evolve pretty slowly and we think that probably it will be some time time, but we will keep up with it and if anything develops we will let you know about it.

We think it is a pretty slow process at this point in getting congress in Washington to consider the problems of Nevada particularly.

Mr. Redelsperger stated that going back to the local governments going back to the Fire Safety Board, we have discussed that and we have quite a bit of testimony on it and we feel that they are going to be really busy as it is with variances and so forth and again we have time restraints here and in essence this is why we brought in the legislative commission.

Mr. Schweitzer stated that in response to Mr. Redelsperger's statement he agreed with what he said. I think the difference is that the State Fire Board is going to consist of people who are involved in this problem. There are fire authorities and building authorities and owners' representatives who have a certain amount of communication already built in and a recognition of problems that have been brought forth before and solutions and I think that this would enable the State Board to be more readily accessible to both sides and to more readily come to a conclusion acceptable to both sides when there was an issue, whereas the Legislative Commission would have to be briefed on the problem in its entirety and would be a little bit less accessible by virtue of the fact that the Board is meeting on a continuous basis, so I think that the only advantage is that perhaps this proposal would be a little less unwieldy than having to go to the Legislative Commission.

Mr. Jeffrey stated that he did not have any problem with the Fire Safety Board and I think you are probably right that they are better able to do that than the Legislative Commission. The number of ordinances that they would be looking at I don't think will amount to that much. There are 17 incorporated cities and 17 counties and most of the counties probably will adopt the ordinance so I think we are looking at probably in the neighborhood of 20 to 25 ordinances no matter who adopts it and the Legislative Commission is going to be fairly busy too as far as that is concerned, but I wasn't concerned too much about that part because I don't think we are going to be looking at that many ordinance changes.

Mr. Schweitzer stated that he thought that the industry's position is that we recognize that there may be problems which should legitimately be addressed and have not been identified as yet.

So we would not object to consideration of additional requirements where they are warranted. We would just like to have a procedure set up so that this cannot run wild, with the so-called one upmanship and I think that this would provide a means of addressing the problems and finding solutions to them and still maintain a general uniformity of requirements throughout the State.

Mr. Jeffrey stated that he agreed and that one of the things that he was concerned about was that there are a lot of things that we don't address in the bill. If we don't allow any deviation then we may find a problem that may cause a serious life safety hazard and if we haven't addressed it we won't have anybody doing anything about it. I have been concerned about that from the beginning and this may be the answer.

Mr. Craddock stated that of course the expertise within the Board that we are establishing is recognized and that is why we selected the people that we did and that is why even some of the fire people have indicated to me privately that they think maybe we have too many fire people involved in it. I still in my own judgment tend to disagree with that because of the possibility of breaking up into subcommittees but I will, of course, encourage comments from them along these lines. Mr. Craddock stated that during the time that the subcommittee met and before he knew that Clark County was in the process of adopting a more stringent code and at that time I did not know that Douglas County had done so, but my idea in selecting the Legislative Commission was to discourage this kind of upmanship so to speak. I am certainly receptive to that.

Mr. Schweitzer stated that there are two types of solutions. I might point out that there are two areas. One is the technical area that this Fire Safety Board addresses and there are those solutions that are, for the want of a better word, a political solution, a solution of elective boards reacting to public and public pressures and that is a solution in an area that concerns us a little in the future - the possibility of that developing and if there could just be some lid even if the areas that were defined that could be placed on that so we would feel that once this thing had been address that we were not under the jeopardy of other situations arising that would put us through it all over again and as I pointed out, we answered both boards. I think it is possible between your subcommittee and the people involved to possibly with a little time, come up with something in that area.

Mr. May referred to an ordinance adopted by elected officials at local levels subject to a veto by an appointed board appointed by the Executive Department that Mr. Schweitzer had referred to. Mr. May thought that perhaps the Committee should review and make recommendations regarding the ordinance and of course then refer it to the Legislative Commission, but you might run into a constitutional problem if you have the appointment body with veto power over local officials. They should certainly have input into

I agree.

Mr. Cahill stated that he thought that he might point out that a normal solution of this problem between State and local governments is the State agency defining the perimeters - the general limits and not the specific individual things that come up because rightfully they point out that each area may have somewhat different problems and they should have flexibility to be able to deal with that and maybe this doesn't lend itself to that solution - defining the general perimeters and general rules, but I hope I have voiced the concern that we have and the hope that there might be some security given to the people involved.

Mr. DuBois stated that as a matter of approval on the local level this bill would have the building official doing that. Mr. Huddleston expressed some concern about that. Mr. DuBois asked if Mr. Cahill had any feelings about that.

Mr. Schweitzer stated yes, that he agreed with Tom Huddleston's position. He thought that as it now stands the fire chief has the authority in all jurisdictions relative to fire and life safety and in this bill it is still the fire marshal or the fire authority who has that responsibility in areas of less than 100,000 people and I think that if we are going to make a different arrangement for entities with over 100,000 population that it should at least include the fire authority. I feel that there is a certain amount of input that is necessary on the part of the building department, but historically it is the fire authority who makes the ongoing inspection of these facilities for fire and life safety and have policed the occupancies when they are being used, so I feel that they should have a direct say in that so that we don't lose the benefit that we now derive from their going into the field and making these inspections and identifying the problems and bringing them back.

Mr. DuBois stated that the Board also calls for one more member to be a professional engineer. Do you feel that should be spelled out as to what kind of an engineer? We might get a civil engineer. Are there any engineers that specialize in this?

Mr. Schweitzer stated yes and that he was a registered fire protection engineer in the State of California. This discipline does not exist in the State of Nevada and I believe I am being objective but still would like to see a requirement that there be a registered fire protection engineer on this Board because I do feel that they have some expertise that they can contribute that would not necessarily be available through a structural engineer or a mechanical or electrical engineer.

Mr. Redelsperger stated that they had discussed that a little bit but that they felt that they should leave some of the discretion up to the Governor. He is going to appoint the engineer and I am sure that he will take that under consideration.

2002

Mr. Schweitzer stated that he had no problem with the make up as it now exists, but as long as the question was addressed to me I felt that I had to answer it as I did.

Mr. May addressed Mr. Schweitzer and stated that so we can get some kind of a cost benefit concept as we are looking at this, there was a reference made this morning to an ordinance adopted by Douglas County using a specific hotel in South Lake Tahoe. I got the impression the cost - or at least one bid - may run approximately \$1,000 per room. Is that a reasonably acceptable ballpark figure?

Mr. Schweitzer stated that this is a very difficult thing to get a handle on, however, recognizing that I think that we have some figures offered this morning which were probably factual. The hotel in question apparently was sprinklered at the ground floor and the second level. This means that they had their underground supplies and the water connections and fire pumps if they were necessary and so forth in place. Now they probably are also going to utilize existing dry standpipe which run the height of the building and make that a combination supply for the hose and for the sprinkler system. Under these conditions, I have had another hotel in Las Vegas that quoted approximately the same figure of \$1,000 a room. There is another hotel that is already under contract where they had to bring in their water supplies and put in their fire pumps and so forth, and that was running \$2,000 a room exclusive, and I think this one may be exclusive of the necessary cutting and patching and repairing that is done to accomodate the running of pipes and/or the concealing of pipes. Now the thing - if we say \$1,000 a room where there is an existing water supply and the casino area is completed, and perhaps \$2,000 a room in the areas in buildings where there are no sprinklers, the other thing that you have to consider is that in order to install these sprinklers they will probably on a floor by floor basis will have to close down and cease to operate, so their revenue is being reduced and the loss of revenue is probably going to equal or exceed the cost of the sprinkler system in an existing occupancy. So I think the figure that was given to us was right and correct and I agree with it, except that there are other costs that have not been identified.

Mr. Cahill stated that to give you an example at the other end - the other extreme - and I don't think there would be any reason for the people involved to object to it being quoted, I have heard figures from an inn of about 150 rooms that we could almost hit with a rock that because of the all steel construction, the all cement construction steel, there are no sub-floors, they have had a cursory inspection and analysis of the cost and it runs closer to \$1,000,000. Now that sounds like a lot of money, but they assure me that because of the construction and what they have been up against that the figure could run closer to that than the \$1,000 per room.

Mr. Jeffrey stated that it was a question of whether they were concealed or on the surface. Any of those who conceal, and I have been associated with quite a bit of it, will be very expensive to conceal.

Mr. Schweitzer stated that one other aspect that has a great impact on this that is not generally recognized, is that when you talk about the cost of sprinklering per square foot, this is per square foot of sprinklered area. There are buildings where they have an occupiable attic or a combustible material or construction in the attic which would require a double layer of sprinklers. You have to put a full layer of sprinklers in the attic and a full layer of sprinklers under the ceiling in this case. Now if an owner hears a figure that it is going to cost him \$2.50 per square foot to sprinkler, he automatically thinks of the number of square foot that he has on the floor. In reality it is going to cost him twice this much because he is going to have 10,000 square foot of floor space which has to be sprinklered and another 10,000 square foot of attic space that has to be sprinkler if there are combustible materials in the attic. So the variables that are so great that even people in the business many years, cannot come up with a figure that they really feel comfortable with in giving a quote. They always have to qualify this so much that it becomes meaningless. I think that is where we are right now.

Mr. Craddock stated that he personally had spent many years as project manager on several multi-million dollar projects and to get a handle on this was virtually impossible as relates to the varying conditions that you encounter in the course of performing the work. One of the things that interests me in this is the willingness of the gaming community to come forward and on the record state the attitude that they have. Maybe that is one of the reasons that I am anxious to see to it that they don't get involved in an absolute upmanship type operation as relates to local government. I think the competition within the industry that has been indicated here and the willingness of them to cooperate will minimize a lot of the problems that relate to the local political subdivision quibble that we had going here. I think these things will resolve themselves as time goes on. The gaming industry will have to solve some of these problems and they fully recognize that and have demonstrated it on the record.

Mr. Jim Harris, Battalion Chief Fire Marshall, Truckee Meadows Fire District in Washoe County. I will try not to be too redundant on the testimony already given but I do have some concerns but first of all I would like to say that Truckee Meadows does support A.B. 505 in its general provisions. I would like to say one word about S.B. 214. We did work and testify on that bill and work on a sub-committee and we find some significant differences in the two bills and in addressing the issues of the general statement on A.B. 505, and I appreciate the concerns of the committee in trying to protect the industry somewhat from some overlayering and some excessive and maybe some unreasonable local ordinances. 2001

I haven't seen that happen in our history in Nevada. I think we are speaking of probably a handfull of local entities who have by statute in their charters, provided the responsibility to provide for fire and life safety ultimately at the local level and they need the tools to be able to deal with their local special problems and I think the whole business of fire and life safety as a result of the MGM and Hilton disasters was to come up with some form of comprehensive legislation that would enable the local entities to deal with their local problems.

S.B. 214 differs quite a bit from A.B. 505 in that philosophy. S.B. 214 not only permitted local entities to adopt strict or more stricter ordinances, but mandated it. And here in A.B. 505 we are getting into at least the way I interpret this general statement a philosophy of mini-maxi codes, which I do not support. I think we are all looking for some workable minimum regulations that could be implemented and there was some technical problems with the implementation, but we were not looking for maximum lids on regulations. I think on the local level in the normal ordinance adopting process, there are plenty of checks and balances. I have heard recently the one-upmanship term but I have not seen it in effect work. I don't know of any local community and especially in Washoe County, that could adopt a local ordinance that would create a hardship beyond reasonableness on any local industry because we depend so much on our local industries and I have never seen yet local governing bodies act irresponsible in that regard. I would support the idea that I don't feel that we have the one-upmanship problem. I do not feel that we necessarily have excessive ordinances being adopted currently and I would hope that this bill as it is finally adopted would allow local entities to continue to deal with their local conditions in a reasonable manner.

Moving into Section 2, I do have a concern with the authority. Not to be redundant, but to reinforce the fire marshal's testimony, I feel that we should share the responsibility with the building official when it gets down to the building permit phase of this retroactive application but everybody I think realizes that the type of system we are addressing retroactively for fire and life safety have always come under the jurisdiction of the fire authority in the plan checks approvals and the on site inspections and the acceptance and the continuing inspections with the building after installation for the maintenance. Building officials to my knowledge don't routinely check sprinkler plans. Fire officials do this and have had the authority in 477 up until now. I think if we change the authority, we are going to take NRS 477 out of context. The authority in the local jurisdictions and counties over 100,000 today are required by 477(2) to enforce fire marshal regulations. What we will have is different sets of regulations in 477 with the authority being different people.

I would like to say as far as my knowledge is in Washoe County, there is complete cooperation between building and fire officials.

2005

Mr. Harris stated that in Section 6 he would like to point out a technical problem. In the first paragraph preceding subsection 1, where it speaks to buildings where human occupancy is permitted on floors more than 55 feet, the word permitted presents a technical problem in my opinion and that is that this leaves a point that can be argued with building owners and operators as to what levels they permit occupancy. Hypothetically, a person could have a 10 story building and say I don't permit occupancy above the fourth floor and then we have six floors unprotected. It is a hard thing to enforce and it would be a hard thing to deal with in a retroactive application. It is open immediately to variances and appeals. I would recommend that the term "permitted" on "human occupancy permitted" be deleted.

In Section 9 in the makeup of the Fire Board, I don't have any particular problem with the title of the Board but I see through the subcommittee's actions on the bill we have gone from qualifying statements on the makeup, we went from two fire chiefs and two fire marshals all the way back now to three representatives. I would recommend that if we are going to have fire people representative, that they have a qualifier in there that at least they be a fire marshal or a fire chief - something to qualify them by expertise. This may be a technical thing and maybe I am concerned without any real reason, but this would imply that just about anybody could be a representative and could be appointed.

I agree with the representation on that fire board of a building official.

In Section 10 I would also like to testify that I have concerns with dropping the scope and objectives of the Fire Board of Safety and I think it was the intent of the Governor's Commission on Fire Codes to provide for such a board that had some broad scope, more of a permissive scope to allow them to deal in the technical matters and not to restrict them to only being an appeal board. I would hope that this piece of legislation is reasonable enough in its final form that there won't be that many appeals but that there might be variances needed to be heard. I don't think that Board can deal with these technical problems that the Commission put in their report. That they did not have time to do the constraints to address so many of the technical problems and implementation and I believe that Board needs this scope to deal effectively. I would hope that those provisions of Section 10 could be reimplemented into the bill.

Mr. DuBois asked if Mr. Harris saw any problems in making a survey in his area - Washoe within a twelve month period?

Mr. Harris stated no. There are no problems in our area that I see. I do want to say that it hasn't been talked about much and that is who is going to actually do the survey and I think it has been fairly recognized and at least accepted with the fire officials is that they expected to be the ones to do those surveys.

to identify these particular buildings and identify the kinds of retroactive provisions would be needed to be implemented. Going back to that authority thing, if we place the authority with the building official we may have some differences in opinion. Just technical.

Mr. Dini stated that he did not think so. Mr. Dini stated that 477.130 provides that counties over 100,000, the local guys have the jurisdiction and in counties of less than 100,000 the fire marshal has it.

Mr. Harris stated that the designated person in counties of over 100,000 is the fire chief and not the building official in 477 and that has always been that way.

Mr. Dini asked if there was any more testimony. He indicated that the rest of the testimony would have to be taken quickly as the committee had ten minutes before the Assembly went into session.

Mr. Bob Sears, Chief of the Fire Department in Boulder City, testified next. He stated that he is in favor of A.B. 505 but that he had some questions that pertain my entity and the number one question is this general provision here which states that local entities may not have ordinances stricter than this particular ordinance. Boulder City does have and has had retroactive ordinances since 1979 which would create a serious impact on our operations should this be allowed to remain in here. The reason that we went to the retroactive type of ordinance was for cost effective measures so that we could offer a more cost effective operation to the citizens of Boulder City. Should we have to go with this and redo the present ordinance that we have, I can anticipate many problems. One other area that I am concerned with is the one that Chief Harris mentioned here and that is in Section 2 where the building officials in counties of more than 100,000 are in charge of this particular section. The problem that I see here is that probably the fire departments check all these buildings on an annual basis at least. They do know what is in the building and the maintenance of the building as such. I, from 30 years experience, know that the fire departments look much closer at the safety features in a building because we are the guys that are putting our lives on the line when we go into that building if it is on fire. In our particular situation in Boulder City, the Fire Department is the final say in any safety as far as fire is concerned in any of these buildings, but I do see that it could create a serious problem in other entities because of this.

The other section that I have some concern about is Section 9 where we have put in there three representatives of the local fire department. I do feel that those should be specified as to what position they are so that - I think they should be the fire marshals or fire chiefs or people that are well versed in this subject.

Other than that the bill looks like a very good bill. If you have any questions I will try to answer them.

There were no questions.

Mr. Roy Parrish, Clark County Fire Chief, Las Vegas, Nevada, testified next. He stated that he thought that what we were discussing in retrofitting is what I have experienced in the last six months. What we are talking about is the older buildings. The older buildings are the problem. It is not the newer buildings. The older buildings are the ones that don't have the sprinkler system. We don't have the paging systems - don't have the detection systems - don't have the smoke control - those are the problems. So as we all discuss these particular items and go through these particular areas we are talking about the real problems. You can go prior to the MGM and in my 22 years of service on that department, we have never lost a citizen or tourist on the Las Vegas Strip. That record is gone. Let's talk about new now. Our real problem is the older buildings and it is redundant for me to go through the items as you are short on time, but I do support a dual fire/building responsibility and I think all the other testimony is well and good but I feel that I was the one that was talking to Mr. Craddock about having five fire people on that board. I think that is a little bit top heavy. I think the Governor should have the authority to appoint those individuals he deems necessary if he wants to appoint two fire marshals and one fire chief or whatever, they could be spelled out. I don't have a problem with that either, but Clark County passed an ordinance yesterday that is more stringent than A.B. 505, but I support the concept of A.B. 505.

Mr. Craddock referred to the actual mechanics of drilling holes in structural beams and that coupled with the fact that the building department is generally in charge of building construction, I was perfectly satisfied to leave the local authority to define any problem that they have and to authorize the assistance by the fire department when necessary. That turns it back to the local people. Mr. Jeffrey and I, I think will have to agree that the local people have the authority to bring the fire department in at will. I thought that involvement of the safety of the building, the actual mechanics involved in installing the equipment were more along the lines of the building department's typical responsibility than was the fire department, and that the local people can bring the fire department in at will. Do you have a problem with that if that is our concept?

Mr. Roy Parrish stated that he could go back to 1973 - MGM. Sprinkling of the casino. It is over 12,000 square feet - it met the criteria as far as the fire department was concerned, the building official overruled us - he had the jurisdiction and the authority and it was not sprinkled.

Mr. Craddock asked if Mr. Parrish did not think that we had all learned a little between then and now. Don't you think that the building department will be a little more careful as will the county commission in the event that they were derelict?

Mr. Parrish stated that he still had reservations and still thought it should be a dual responsibility. I think that we are the one that has to take the heat and responsibility when a fire occurs; we are the one that has to go in annually and take a look at these particular type of buildings, and so I feel that it is necessary that we have a dual responsibility.

Mr. Redelsperger stated that if they had a joint authority and then they were in disagreement, how do you visualize that being worked out. Could they perhaps go to the commission and let the commission be the judge of which direction they should go in if there is a joint authority. We have heard lots of testimony in the subcommittee and here and there was quite a bit of disagreement between the fire representatives and the building departments and I can see that there is going to be a conflict if there is a joint authority. Maybe you could elaborate on how, if there is an impasse, it can be resolved.

Mr. Parrish stated that he thought that maybe the alternative is to take it to the group of people here. ICBO was the major factor in ruling at the MGM and they said that it should have been sprinkled but the local authorities said it wasn't sprinkled. So there are going to be conflicts, I agree with that because you have different philosophies. We are talking about life safety - they are talking about building integrity and when you get into those different types of philosophies, yes you are going to have a difference of opinion. But that is where you are going to have to work those particular items out.

Mr. Redelsperger stated that it was just another item that was going to come to that Board again too and we are really going to have to consider the makeup of that Board and its responsibilities.

Mr. Craddock stated that he did not have any real problem with that.

Mr. Redelsperger stated that he would rather see it go to the commission. Mr. Redelsperger stated that the Fire Safety Board would be overloaded as it is.

Mr. Jeffrey stated that we should not get the authorities confused though because the authority we are talking about in the bill is the local authority or the fire marshal, not the State Board. The State Board will only be there to hear the variances.

Mr. Redelsperger stated that the thought that the county commission of the local subdivision has jurisdiction.

2009

Mr. Tony Taramena, Chief Building Inspector for Washoe County testified next.

He stated that he was going to be brief and would just address himself to the business of authority. In Washoe County we work with three different entities. We work with the North Lake Tahoe Fire Protection District, Truckee Meadows and the Nevada Division of Forestry and I think it would be difficult if you have dual authority to make this work in all cases because some of the fire districts may not have the expertise of the building division and I think it would be more difficult. We have an excellent rapport with Truckee Meadows and the others, but I think with the personnel we have it would be better for the building departments would be the authority in those cases over 100,000. We are just not working with one, we are working with three of them now. We submit the plans to them. When we receive those plans, those plans go to those fire protection districts for their approval. Now we would never issue those permits until they had signed off. We would have to work it out because we couldn't possibly issue those without their signatures on those plans, so that would be taken care of in meetings and we would resolve the problems.

Mr. Dini asked Mr. Taramena what if you had the philosophical problem like you had at the MGM where the fire department says you have got to have sprinklers and who would make that final judgment.

Mr. Taramena stated that they would have brought in an expert from ICBO in that particular case. That is what we do all the time. If we don't have an answer, we belong to this organization and we will contact them and get a reading on it.

Mr. Dini stated that it may be done in Washoe County, but that they may not do it statewide.

Mr. Taramena stated that that was possible.

Mr. Marty Richard, Fire Marshal of the City of Reno, testified next. Once again I will make it very brief and state that we have talked to our people - our building official - and there were a couple of comments that he wanted to make. He is sorry that he was not able to attend this meeting. He'd like, and I myself as well, would like to put the word in on the first page, Item #1, provide or business license. In other words, it would read, when there was a change of use or a change of occupancy of the building or a business license change, that that would also comply and I think Mr. Jeffrey did mentioned it earlier that that was a portion of the intent, but the words are left out.

Mr. Dini asked what line that was on.

Mr. Richard stated it would be in the amendments.

2010

Mr. Richard stated that he agreed with the comments that have just recently been made and the comments from the Reno building official and that he would support a dual jurisdiction there where it should read on line 3, of Section 2: The building and fire official within cities within counties of 100,000 or more.

Mr. Richard stated that he believed that the rest of it has already been addressed in previous comments.

Mr. Dini stated that there were two more bills on the agenda today which the committee could not hear. He stated they were A.B. 584 and A.B. 588 and that the committee would hear those Monday morning with the rest of the schedule.

Mr. Dini stated that the committee would have a general work session on Friday on the retrofitting bill. He stated that the committee at that time would not take any testimony but would just have a work session, get the amendments ordered and drafted and we will get a reprint on the bill and then we will have continued hearings on the bill next week on the redraft. Mr. Dini asked if that met with the committee's approval.

Mr. Richard asked if he could make one quick comment. He stated in the name of the Board, I realize that most of us really haven't taken an issue as to what you call the Board but I have heard it mentioned now at least a dozen times as the Fire Safety Board and I think that has been an amended change to the Building, Fire and Life Safety Board and just for the sake of convenience, it probably ought to go back to the same title that it had before of just calling it the Fire Safety Board rather than to encumber it with the Building, Fire and Life Safety Board.

There being no further business to come before the meeting, the meeting adjourned at 11:03 A.M.

Respectfully submitted,

Barbara Gomez
Barbara Gomez
Assembly Attache

2011

ASSEMBLY GOVERNMENT AFFAIRS COMMITTEE

GUEST LIST

Date May 6, 1981

PLEASE PRINT

<u>PLEASE PRINT YOUR NAME</u>	<u>PLEASE PRINT REPRESENTING:</u>		<u>I WISH TO SPEAK</u>		<u>BILL NO.</u>
			<u>FOR</u>	<u>AGAINST</u>	
VERNON D. BALDERSTON	LOCAL UNION NO. 669	X	FOR		214
BRAD HEUBERGER	HYS FIRE PROTECTION	X	FOR		214
WILLIAM KUHNLE	LOCAL 669	}	FOR		214
ROBERT SLYTER	" "		FOR		214
JOHN R. KING	" "		FOR		214
TOM HEDDLERSTON	State Fire Marshal		✓	FOR	
BRUCE L. KANO	TAHOE DOUGLAS FIRE LIST	✓	FOR		214 & 505
JERRY ADAMS	CONSULTANT NEV HOTEL ASSOC	✓	FOR		AB 505
				✓	AB 584
BARNEY G. LUTAN	CITY OF RENO			✓	AB 584
ALLEN	CITY OF RENO			✓	AB 584
John Cro	LEO - audio		✓		AB 584
ROBERT STUBBS	BOULDER CITY FIRE DEPT			✓	AB 505

PLEASE PRINT

201

ASSEMBLY GOVERNMENT AFFAIRS COMMITTEE

GUEST LIST

Date July 6-1981

<u>PLEASE PRINT YOUR NAME</u>	<u>PLEASE PRINT REPRESENTING:</u>	<u>I WISH TO SPEAK</u>		
		<u>FOR</u>	<u>AGAINST</u>	<u>BILL NO.</u>
Barbara Kahle	concerned citizen	X	✓	214
GEORGE TRASKETT	NEVADA BELL			
J Campbell	City of Las Vegas			
D F ...	NEVADA SORT ASSOC	X		
Bill SCHULTZ	NEVADA RESORT ASSOC. Gaming Unit	X		
SIM HARRIS	Revere Nevada Fire Prot. Dist	X	✓	(505)
y ...	Revs fire Marshal			

2013

Ex. A

STATE OF NEVADA
LEGISLATIVE COUNSEL BUREAU
LEGISLATIVE BUILDING
CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

LEGISLATIVE COMMISSION (702) 885-5627
KEITH ASHWORTH, Senator, Chairman
Arthur J. Palmer, Director, Secretary
INTERIM FINANCE COMMITTEE (702) 885-5641
DONALD S. MELO, Chairman
Ronald W. Sparks, Secretary
William A. Dole, Treasurer



May 5, 1981

MEMORANDUM - REVISED

TO: Chairman and Members of the Assembly Committee on Government Affairs
FROM: Assemblyman Jack Jeffrey
SUBJECT: Revised Compilation of Amendments to A.B. 505

Following is a revised compilation of the proposed amendments to A.B. 505:

GENERAL

Make the provisions of the bill apply only to existing buildings (retrofitting). State that local entities may not adopt an ordinance which requires stricter measures than are required in this bill for retrofitting of the types of buildings and occupancies covered within this bill, unless:

- (1) The ordinance applies to buildings and occupancies covered within this bill only when there is a change of use or a change of occupancy of the building, or
- (2) The legislative commission approves the ordinance.

(Through existing law, new buildings are and would continue to be subject to the code adopted by the state fire marshal and applicable local ordinances.)

SECTION 1

No changes.

2014

Exhibit A

SECTION 2

Page 1 lines 3-5 Amend section 2 to read as follows:

SEC. 2. "Authority" means:

1. The state fire marshal in counties having a population of less than 100,000;
2. The building official, for the unincorporated portion of the county, in counties of 100,000 or more, unless otherwise defined by local ordinance; and
3. The building official in cities within counties of 100,000 or more, unless otherwise defined by local ordinance.

SECTION 3

Page 1 lines 6-18 Amend section 3 as follows:

SEC. 3. The owner or operator of any building, except a [private residence] single-family detached dwelling, shall:

1. Equip every exit corridor and other means of exit with emergency lighting to permit the safe evacuation of the building, as approved by the authority.
2. Equip every door to an exit corridor which serves 30 or more occupants with a device, approved by the authority, which closes the door.
3. Immediately provide adequate facilities for exit.
4. If the building has three stories or more, enclose every open stairway or vertical shaft with:
 - (a) Construction whose resistance to fire has been approved by the authority; or
 - (b) Alternate means approved by the authority which afford equivalent protection to life and property from fire.

SECTION 4

Page 1 lines 19-23 Amend section 4 as follows:

SEC. 4. The owner or operator of every hotel or motel of three stories or more which contains 20 or more guest rooms, apartment building or condominium of three stories or more with 15 or more [apartments] dwelling units or any office building of three stories or more shall equip the building with fire alarms in compliance with paragraph 2 of section 1202B of the 1979 edition of the Uniform Building Code.

SECTION 5

Page 2 lines 1-13 Amend section 5 as follows:

SEC. 5. The owner or operator of every hotel or motel which contains at least six guest rooms, or apartment building or condominium with at least three [apartments] dwelling units, shall:

1. Equip each room primarily used for sleeping in a motel or hotel and each dwelling unit in an apartment building or condominium with a smoke-detector whose placement is approved by the authority.

2. Seal any opening used to supply air from a corridor to a guest room or to an apartment unless:

(a) The corridor contains smoke-detectors as required by regulation of the state fire marshal;

(b) Activation of any two detectors causes the supply of air to cease and seals the opening between the room and the corridor; and

(c) He obtains the approval of the authority to supply air in this manner.

SECTION 6

Page 2 lines 14-39 Amend section 6 as follows:

SEC. 6. The owner or operator of every hotel, motel, condominium, office and apartment building where human occupancy is permitted on floors more than 55 feet above the lowest level of ground accessible to vehicles of a fire department shall:

1. Equip each exit corridor of the building with fire sprinklers as required by regulations of the state fire marshal;

2. Equip each room with at least one fire sprinkler above each door opening into an exit corridor of the building;

3. Equip every elevator so as to permit it to be recalled automatically, in compliance with section A 17.1 of the 1978 edition of the American National Standards Institute and section 211.3 of the 1981 amendments to that edition, to the first floor or, if necessary, to any other floor of the building not affected by fire;

4. Post the number of each floor in every stairwell and in every lobby adjacent to an elevator;

5. Equip the heating, ventilating and air-conditioning system with an automatic device to shut it off as prescribed in section 1009 of the 1979 edition of the Uniform Mechanical Code, and with an additional smoke-detector as required by the 1978 edition of National Fire Protection Association Standard 90A; and

6. In each room primarily used for sleeping:

(a) Post in a prominent location an explanation of the route to use for evacuation of the building; and

(b) Install a paging alarm system which conforms to the regulations of the state fire marshal, to permit vocal warning and instructions to the occupants.

SECTION 7

Page 2 line 40 - Page 3 line 6 Amend section 7 as follows:

SEC. 7. 1. The owner or operator of every building or portion of a building used for public assembly [, except a church or a theater with fixed seating]:

(a) Which has [more than 5,000 square feet of floor area, including any gaming areas and showrooms] a room or rooms totaling more than 5,000 square feet in floor area used for public assembly, within a building of 12,000 square feet or more, shall install automatic sprinklers for protection from fire as required by regulation of the state fire marshal, except in those areas where the authority waives this requirement. The authority may waive this requirement for any space which is separated from this area by construction whose resistance to fire has been approved by the authority.

(b) Which is certified for occupancy by more than 300 persons shall [not use any interior finishes composed of combustible fiber board]:

(A.) Use interior finishes which comply with chapter 42 of the 1979 edition of the Uniform Building Code relative to flame spread rating; or

(B.) Install automatic sprinklers for protection from fire as required by regulation of the state fire marshal, except in those areas where the authority waives this requirement. The authority may waive this requirement for any space which is separated from this area by construction whose resistance to fire has been approved by the authority.

2. For the purposes of this section, a building or a portion of a building is used for public assembly if 50 or more persons assemble there for any purpose other than in the normal course of their employment.

SECTION 8

No changes.

SECTION 9

Page 3 lines 13-32 Amend section 9 as follows:

SEC. 9. 1. The board of building, fire and life safety, consisting of ~~nine~~ eleven members appointed by the governor, is hereby created.

2. The governor shall appoint:

(a) A licensed architect;

(b) ~~Two~~ fire marshals of full-time, paid fire departments;

(c) Two fire chiefs of full-time, paid fire departments; Three representatives of local fire departments, with at least one being from a fire department in a county having a population of less than 100,000;

~~(d)~~ (c) A professional engineer;

~~(e)~~ (d) Two representatives of gaming and lodging enterprises;

~~[and]~~

~~(f)~~ (e) The state fire marshal~~[,]~~;

(f) A building official of a local government within each county having a population of 100,000 or more; and

(g) A licensed general contractor,

to be on the board. ~~[No member other than the state fire marshal may serve for more than two consecutive terms.]~~

3. In addition to being a member of the board, the state fire marshal shall serve as the secretary for the board.

~~[3.]~~ 4. The board shall select a chairman from among its members to serve for 1 year.

~~[4.]~~ 5. The board shall meet approximately once each month or at least eight times a year or on the call of the chairman, the state fire marshal or ~~[any three members]~~ a majority of the members.

~~[5.]~~ 6. The members of the board, except ~~[the state fire marshal]~~ those who are paid by a public entity, are entitled to receive a salary of ~~[\$40]~~ \$80 for each day's attendance at a meeting of the board or a subcommittee of the board, and all members are entitled to the per diem allowances and travel expenses provided by law. All such compensation is to be paid from the budget of the state fire marshal division.

SECTION 10

Page 3 line 33 - Page 4 line 2 Amend section 10 as follows:

SEC. 10. The board of building, fire and life safety shall[:

1. Consider the necessity of requiring various features in existing buildings to promote fire prevention, fire protection and safety of human life.

2. Evaluate technological developments, new architectural designs and laws relating to fire prevention, protection and safety and advise the state fire marshal of the results of its evaluation.

3. Develop a method to evaluate the adequacy of practices relating to the enforcement of fire codes, including without limitation, conferences before a building is designed, review of architectural plans, inspections of construction sites, other regular inspections and any other practices relating to the enforcement of fire codes by all authorities within the state.

4. Identify any unfulfilled needs for additional personnel, equipment or other resources and for statutory changes and develop and distribute guidelines for use by the authorities.

5. Develop programs in fire protection, fire prevention and life safety for use by schools, the public and all persons employed in buildings subject to sections 3 to 7, inclusive, of this act.

6. Hear] hear and decide requests for variances from and requests to undertake alternate methods for achieving substantial compliance with the provisions of sections 3 to 7, inclusive, of this act.

SECTION 11

Add a provision that the board shall collect a fee of \$200 for each request for a variance which is filed. The state fire marshal should collect the fees and deposit them with the state treasurer for credit to the general fund.

SECTION 12

Delete section 12 entirely.

SECTION 13

Delete section 13 entirely.

SECTION 14

Page 4 lines 25-44 Amend section 14 as follows:

SEC. 14. 1. Each authority [responsible for enforcement under subsection 1 of NRS 447.030] shall, within 12 months after the effective date of this act, complete a survey of each building within its jurisdiction subject to the provisions of sections 3 to 7, inclusive, of this act.

2. When the authority completes its survey of a building, it shall immediately furnish a copy of the survey to the owner or operator of the building.

3. The owner or operator shall:

(a) Furnish to the authority within 6 months after receiving the copy of the survey his plans to effect the corrections identified by the survey as necessary for compliance with sections 3 to 7, inclusive, of this act.

(b) Make all of those corrections within 36 months after the effective date of this act.

4. The board of building, fire and life safety may waive the times prescribed in this section for:

(a) Completion of surveys by a responsible authority; and

(b) Submission of plans or completion of work, or both, by an owner or operator, if the applicant for the waiver demonstrates an appropriate effort and a genuine inability to comply within the time prescribed.

SECTION 15

Delete section 15 entirely.

SECTION 16

No changes.

NEW SECTIONS

- I. Provide that the board of building, fire and life safety will cease to exist on July 1, 1985.
- II. There is hereby appropriated from the state general fund to the state fire marshal division of the state department of commerce the sum of \$164,648 for the fiscal year beginning July 1, 1981, and \$140,627 for the fiscal year beginning July 1, 1982, for the purposes of paying salary, per diem and travel expenses of the board of building, fire and life safety and for performing the duties given to the state fire marshal in this bill. The unencumbered balances of the appropriations for the fiscal years beginning July 1, 1981, and July 1, 1982, may not be committed for expenditure after June 30, 1982, and June 30, 1983, respectively, and revert to the state general fund as soon as all payments of money committed have been made.

QUESTIONS

- I. A legal opinion or interpretation is needed on the following points and any related matters:
 - A. Who has authority for enforcement of A.B. 505?
 - B. Would a violation be a civil or criminal violation?
 - C. Would an administratively levied fine be allowable under this law, or would a court action be necessary to force compliance?
 - D. Who would have the authority to initiate a court action for a building owner or operator not complying with this law or a directive/decision from one of the entities which may make such directives/decisions?
 - E. Does placement of this new language in chapter 477 of NRS versus placement in some other chapter have any effect on the answers to the previous questions?
- II. Under section 11, would the board have to act on the request within 30 days or only grant a hearing within 30 days?

DISCUSSION

- I. Should the restriction on local government ordinances outlined in the "general" section (page 1) only apply to the types of measures covered in this bill?

Explanation: The currently proposed language under the "general" section would not allow a local government to require retrofitting of measures (like number of exits) which are not addressed in the bill. Should the restriction on local government ordinances apply to retrofitting of these "non-related" types of measures?

FWW:jlc:4.2. ASB5051

Contact: Richard Borgardt
Fresno Fire Department
488-1023

FOR IMMEDIATE RELEASE

AUTOMATIC SPRINKLERS IN DOWNTOWN FRESNO

There has been a significant reduction in fire loss for the downtown Fresno area as a result of automatic fire sprinklers.

The City's program, which began in 1961, is utilizing automatic fire sprinklers in place of large numbers of public firefighters, saving large sums of tax monies. In 1970, the City had 41.8 square miles and 69 firefighters on duty protecting it. In December of 1979, on-duty firefighters had been reduced to 68, however, Fresno's boundaries exceeded 60 square miles.

During the 1970's, fifty-three fires occurred in downtown Fresno resulting in a total fire loss of \$42,126. This fire loss averages to \$795 per fire compared to a current City-wide average loss per fire of \$4,690. Fire loss consists of damage caused by fire, smoke, and water used in extinguishing the fire, both by the Fire Department and automatic sprinkler systems.

During this period, Fresno has maintained an insurance industry rating of Class Two, on a scale of one to ten, with one being perfect and ten having no fire protection at all.

The Fresno Fire Department expects this trend to continue due to the sprinkler ordinance adopted by the City in February of 1979.

2023

Exhibit B

All B.A.'s
T.P.
212

THE NEED FOR LEGISLATED AUTOMATIC
FIRE DETECTION AND SUPPRESSION SYSTEMS

A Report to the Public Affairs
Committee of Edmonton City Council

Exhibit c
2024

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A BRIEF DEALING WITH THE NEED FOR LEGISLATED
AUTOMATIC FIRE DETECTION AND SUPPRESSION SYSTEMS

INTRODUCTION

In the past few months there have been five multiple death fires in North America that have attracted much public attention. They are the Mississauga Nursing Home fire, the MGM Grand Hotel fire, Las Vegas; Stouffers Inn Hotel fire in New York State, a Nursing Home in New Jersey and the Inn on the Park Hotel fire in North York, Ontario.

The most dramatic fire was the MGM Grand where 84 people died, but the fire with the most serious implications occurred in the Nursing Home in Mississauga where 25 people died in a building that met the major requirements of current building codes for fire safety. All of these fires have led to a public questioning of the adequacy and effectiveness of current codes.

This report has been prepared as a result of concerns regarding the Alberta Building Code expressed by the Edmonton City Council.

The report discusses the significance of large loss fires from the point of view of where multiple death fires are occurring, why they are occurring, the implications of these deaths on code requirements, a review of the Alberta Building Code fire safety requirements now in place, which relate to the above, and recommendations for change. There is also a brief presentation on the economic effects of the recommendations.

Much of the statistical data used preparing this report is based on experience in the United States. This is by default. Similar data are just not available for Canada. Nevertheless, the conclusions drawn from our information are applicable to Canada inasmuch as our buildings are built under similar, if not identical, building codes.

The Province of Alberta has an opportunity to take the steps necessary to reduce the probability of multiple death fires, and to reduce fire losses from all fires. These objectives can be achieved by making amendments to the Alberta Building Code and by applying these changes retroactively to many buildings requiring upgrading. Experience elsewhere indicates that significant reduction in multiple death fires can be expected by applying new requirements retroactively. The same observation holds true for all fire losses.

MULTIPLE DEATH FIRES

This section of the report will address where large life loss fires occur, the comparison between multiple death fires and overall fire deaths, and the relationship between multiple death fires and current building codes. The data are drawn mainly from a series of articles in the National Fire Protection Association publication, "Fire Journal".

Since 1975 N.F.P.A. has annually analyzed multiple death fires which occurred in the preceding year. In the N.F.P.A. series, a multiple death fire is one which causes three or more fire deaths. Their records show that multiple death fires represent less than 1/10 of 1% of all fires, but generally result in approximately 15% of the fire deaths in any given year.

Between 85% and 95% of the deaths in multiple death fires occur in residential occupancies.

A most interesting observation is that large life loss does not necessarily occur in old buildings. The Mississauga Nursing Home was only eleven years old, and the MGM Grand was only seven years old when their respective fires occurred in late 1980.

The N.F.P.A. report on the Mississauga Nursing Home fire proves that there is the possibility of large life loss in the event of fire in buildings built under current building codes. In this instance, there were no major departures from building code requirements. The factors that contributed to the large life loss were rapid fire development, failure to extinguish the fire in its incipient stage, improper actions of the staff, and delayed alarm to the Fire Department. Experience indicates that most of these factors would have been mitigated by a complete automatic sprinkler system alarmed to the Fire Department.

The MGM Grand Hotel in Las Vegas was partially sprinklered. Between the unsprinklered casino and the sprinklered show rooms, the fire was stopped by the sprinkler system. On the basis of this observation, one of the teams investigating this fire has stated that a more extensive sprinkler system would have prevented most of the life loss.

We have little information, other than newspaper reports, on the recent Nursing Home fire in New Jersey, the Hotel fire in New York, and the Hotel fire in North York, Ontario. These reports suggest that the New Jersey Nursing Home was a fairly new building which met all the requirements of the local building code except for full automatic sprinkler protection. The New York Hotel was only partially sprinklered, and the fire started in an unsprinklered area.

From the above data it would appear that multiple death fires occur mainly in buildings which are not protected by automatic sprinkler systems or which are only partially protected by such systems. Buildings which conform substantially to current or relatively recent building codes are not immune to multiple death fires.

FACTORS CONTRIBUTING TO MULTIPLE DEATH FIRES

This section is concerned with those major factors, exclusive of fire causes, which appear to contribute to multiple death fires - human behaviour in fire situations, human behaviour and building safety systems, and building furnishings and fuel load.

Human Behaviour in Fire Situations

Building Codes are intended to permit the safe use and occupancy of buildings. Recent research sponsored by the National Research Council of Canada dealing with human behaviour has indicated, however, that the assumptions on which certain life safety measures are based are incorrect. About 1970, human behaviour factors received attention as part of the concern for life safety in high rise buildings, and through the systems approach to fire safety being explored by the U.S. General Services Administration. These studies also indicated that there is sufficient evidence to question many previous assumptions about human behaviour in fire situations.

It is apparent that the occupants' knowledge of the building is an important factor to consider in designing fire safety provisions. For instance, an exit that is not normally used by the occupants may not be seen to exist in an emergency situation. It has been suggested that such an exit will carry significantly fewer people in an emergency evacuation, than one which is used on a day to day basis. However, in calculating building code requirements relative to exiting, this factor is not recognized.

Further, in establishing exiting standards, we have failed to take into account the fact that increasingly large numbers of disabled persons are now part of all types of building occupancies,

and require special evacuation consideration. Such consideration is not only related to building design features, but it must be remembered that extended evacuation time is required, as well, in emergency situations.

In order to provide sufficient time for those unfamiliar with the building, or those disabled persons housed in the building, we should endeavour to reduce rapid fire generation. This is best accomplished through the use of automatic extinguishing systems.

Human Behaviour and Building Safety Systems

Building codes require various safety features or combinations of safety features in order to meet the life safety objectives of the codes. These requirements vary depending upon the occupancy of the building. While these safety features may be in place and intact at the time a building is completed, with the passage of time their integrity is compromised. This can happen through renovations to the building, as people undertaking or responsible for these renovations are often not familiar with the safety requirements of the building code.

Sometimes, the fire safety requirements of a building code or fire code are perceived to place a burdensome or unnecessary inconvenience on the normal operations of an occupancy. Thus these safety features are often defeated by removal, obstruction or alteration.

Then, too, building codes change. Disasters occur which draw attention to shortcomings, and major code changes occur. Rarely have such changes applied retroactively. Thus, at any given time, there is a large stock of buildings which are known to fall below current fire safety standards.

If we are to recognize these human behavioural traits which may compromise fire safety provision, we must develop building and fire codes which take these factors into consideration by building into a structure its own fire protection features.

Furnishings and Fuel Load

It is generally recognized that a major change took place in building construction and furnishings around 1970. Since that time, there has been a rapid increase in the use of plastics in interior finishing materials for buildings and particularly in furniture and equipment. These materials are, for the purpose of this report, characterized by their rapid and intense fire development and their smoke and toxic gas generation. It has been estimated that such materials represent a doubling of the fuel load which could normally be expected to be found in buildings.

There is now less time for building occupants to take appropriate action and it is more difficult for firefighters to find and extinguish the fire and assist building occupants in their escape. Many of the toxic gases released by these materials are absorbed into the building and then released over a period of time after the fire is extinguished. Thus, building occupants are at risk for longer periods of time if they have not been able to evacuate.

To summarize - it appears that fire safety provisions in building codes have been based on incorrect assumptions regarding human behaviour in emergency situations. The normal operations of an occupancy are also not properly considered in these requirements.

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The integrity of building fire safety features is often compromised with time due to building modifications. These compromised situations are often undetected until a fire emergency occurs.

Many fire safety requirements that are now considered necessary to provide a reasonable level of fire safety are not retroactively applied to existing buildings.

The rapid increase in the use of plastics within buildings has drastically increased fuel loading.

Therefore, it appears that only built-in automatic fire detection and suppression systems can adequately counteract the human behaviour and fuel loading problems which contribute to multiple death fires.

THE CURRENT BUILDING CODE APPROACH TO FIRE SAFETY

The primary objective of the modern building code is to ensure a high degree of life safety within buildings constructed under the code. The majority of the measures taken in connection with this objective deal with fire safety. A further objective is to ensure that a fire in one building does not impinge on those structures which are adjacent to it.

From their approaches to building code development, it is apparent that code writing bodies believe that a legislated building code should not be overly concerned with fire protection as it relates to the building itself. Unless a protection feature has a significant life safety component, therefore, it is not likely to be considered as a code requirement. Exceptions to this are very large structures which, if they collapsed or experienced a large fire could seriously affect adjacent properties; buildings with a very large fire load; or structures which are intended for hazardous occupancy.

The Alberta Building Code, in considering the approaches outlined above, has relied mainly on requirements dealing with compartmentation, provisions for exiting, detection and alarm systems, and manual suppression systems. For large buildings the code requires non-combustible construction and smoke control systems. Only for buildings with a very large fire load, and for those with hazardous occupancies does the Alberta Building Code require automatic sprinkler protection.

Compartmentation

To achieve fire safety within structures, the Alberta Building Code relies heavily on the concept of compartmentation. The principle is to contain the fire, through the use of fire rated enclosures, to one area of the building until it can be extinguished.

Numerous problems with this concept are becoming apparent. For one, the compartment itself may encompass too large an area to permit effective firefighting. The allowable areas designated in the Code do not fully consider varying fire loads, ease of access or water availability. Yet all these factors will affect the likelihood of controlling a fire.

There is an implied assumption in the Building Code that the fire will be controlled within the structure. This often proves to be both false and dangerous, especially in a high-rise building. Once a fire breaks through to the exterior, it can spread rapidly upward through windows or along the external wall covering itself.

There are numerous ways that the compartment itself can be rendered ineffective. Even though the fire stops are complete initially, they may be breached at a later date by further construction or remodelling. Concrete enclosures for electrical and mechanical rooms are commonly penetrated by plumbing and electrical services. These holes are often left open or improperly filled with non-fire-rated materials.

The Code requires that any opening in a fire wall must be properly protected by an approved fire door with an automatic closer or fusible link to ensure closure during a fire condition. However, these doors are frequently propped open by occupants, or blocked by objects so as to be rendered useless, and thus the integrity of the compartment is destroyed.

These problems emphasize the need for additional protection. The installation of sprinklers could compensate for shortcomings in these compartments. They might also promote construction cost savings by making larger compartments more acceptable.

There are numerous examples of the effectiveness of sprinklers in containing fire spread, where compartments have failed. However, it is not our purpose to indicate that there is no value in compartmentation. Properly constructed and maintained fire separations are helpful in containing a fire. They do not provide detection or extinguishment. On the other hand, provided that it is properly designed and maintained, the sprinkler system is the fire safety feature that is usually credited with controlling or extinguishing a fire.

A very effective approach is the combination of sprinkler systems and compartmentation. The firestopping assists the sprinklers and the sprinklers can protect defects in the firestopping, plus actively fighting the fire.

Exiting

Another strong concept of the Building Code is the provision for exiting. The emphasis for life safety suggests that if you provide a certain amount of exit width, all occupants can evacuate safely regardless of the severity of the fire. The following discussion will point out why these calculations are unrealistic and inadequate in actual fire conditions.

Recent studies have demonstrated that present methods of determining exit requirements are generally optimistic. Exit capacity is calculated as so many persons per 56 cm. of exit width. This implies that if the exit width is 112 cm., the capacity is doubled. This conclusion is not borne out by field observation.

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The density of evacuees is influenced by each individual's psychological desire for space and interpersonal separation. Most evacuees choose to occupy an average space of two stair treads of a typical 112 cm. wide exit stair. As density increases, the speed of flow of people decreases substantially as well.

Following a study of 40 high-rise evacuations in Ottawa office buildings, Mr. J.L. Pauls of the N.R.C. states: "The results of this study seem to confirm that some long standing misconceptions have greatly influenced Building Code exit stairway requirements.....The conventionally accepted flow of 45 persons per minute per 56 cm. of stairway width appears to be over-optimistic by 50 to 100 percent or more, especially for mid-winter total evacuations in cold climates".

This generally accepted exit capacity does not adequately allow for age differences, physical or mental handicaps, people falling, or the presence of heat or smoke, all of which can considerably reduce the amount of people an exit can handle in a given time.

Another false assumption is that people will commence evacuation as soon as the fire begins. In the first place, the fire may not be discovered in its early stages unless proper detection devices are in place. Also, the person or persons who initially discover the fire can delay the notification of other occupants because they fail to realize the serious danger, may first attempt to fight the fire, or may lack the knowledge of equipment to quickly notify all endangered people. They may also flee the building without attempting to notify anyone, or may be overcome by smoke or heat.

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In the Beverly Hills Supper Club Fire, Southgate, Kentucky, 1977 05 28, the majority of the 164 people who were killed, died in the Cabaret Room. The staff initially attempted to fight the fire. When this was not successful, evacuation was started by word of mouth as the building lacked a fire alarm. The occupants of the Cabaret Room were not notified until twenty minutes after the fire was discovered. Even after the announcement to leave the building was made, patrons were reluctant to leave until smoke began pouring into the area. By this time it was too late to safely evacuate all the occupants.

Another all too common habit of building occupants is to reduce the effectiveness of available exits, or completely eliminate them by unauthorized remodelling, the placing of goods or furniture in exit corridors, or simply by locking doors for security reasons.

Calculations for exiting also assume that people will make full use of all available exits. This idea is usually incorrect. The large majority of people usually attempt to use one exit, ignoring alternatives that are sometimes closer. The chosen exit is usually the largest, the closest or the most familiar one. The herd instinct of human beings also dictates that one follows the majority with the feeling that so many people can't be wrong.

A popular building design trend today in high-rise buildings is that of having a central core for elevators and stairways, with surrounding curtain walls. This provides for only marginal remoteness between exits. A fire in the central core, or fire doors left open, could easily eliminate both exits. This unfortunate design feature is prevalent in most modern high-rise structures throughout North America, with Alberta being no exception.

The above discussion is intended to show that in many fire situations, exiting may be impossible or require a great deal longer to achieve than expected. To ensure that occupants have sufficient time to evacuate, buildings require both smoke detection and automatic extinguishing equipment. The detection equipment will alert them at an early stage of smoke development, and the sprinkler system has the capacity to prevent rapid fire development.

Smoke Control

The National Building Code, and hence the Alberta Building Code, have placed considerable emphasis on smoke control measures. However, in comparison to other construction techniques, the technology of smoke control is relatively new. There is little actual experience with major fires in buildings having smoke control systems. This makes it difficult to properly assess their performance. In the few fires that have occurred, and under test conditions, the systems have been largely ineffective due to design or mechanical faults.

There are two basic possibilities for smoke control: one, dilution, and two, exhaust and confinement.

Dilution involves reducing the concentration of smoke to a tolerable and safe level. Calculations show that this would require huge volumes of air. The National Research Council of Canada technical paper No. 443 states "It is doubtful whether, for Canadian winter conditions, dilution is the most economic approach". "Some materials produce smoke at a rate of the order of five to fifteen times that of the smoke production of wood heated under the same conditions. It is

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clear, that if such materials were present in the building in significant quantities, much more air would be required to dilute the smoke than is practical".

Most design solutions involve a combination of exhaust and confinement. To provide exhausting in a high-rise building, a smoke shaft is incorporated in the building design. A smoke shaft is a vertical, non-combustible enclosure, that is dampered on all floors.

In a fire condition, the damper on the fire floor opens, the roof hatch activates and the exhaust fan starts. At the same time, the building's Heating, Ventilation, and Air Conditioning systems must shut down, and all the HVAC dampers on the fire floor must close to prevent the natural flow of air currents carrying smoke.

There are several problems with this design. First, the quality of construction must be very high to prevent large air leaks. This level of workmanship is seldom seen with today's rapid construction practices.

A second problem is the electrical and mechanical reliability. The system relies on the correct operation of numerous fans, motors, hatches, dampers and relay switches. The failure of any single component would seriously affect successful exhausting.

The other aspect of this design is confinement. Using only physical barriers has not proven effective. The high heat generated by a fire creates sufficient pressure to push smoke past commonly used barriers.

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To augment the existing compartment features, pressurization of all areas, other than the fire floor is maintained. This means pressurizing all floor levels and all vertical shafts including stairwells.

The problem here is again lack of air-tight enclosures. If numerous stairwell doors are opened and particularly the grade level doors, pressure is soon lost. Tests have also shown that without proper design procedures, the force needed to open some stairwell doors exceeds thirty pounds. This could be a problem for children, and old or handicapped individuals.

Another potential trouble spot is the supply fans. In Canadian winter conditions, when the fans are drawing 100 percent fresh air, the freeze protection circuits will shut down the fans unless the heating coils have a very high capacity.

Another quote from Technical Paper No. 443 states "Uncertain factors, such as inside and outside temperature, wind, open doors, and accuracy of leakage-area assumptions, may alter the effectiveness of these measures. The extreme variability and range of such factors make it difficult to devise measures that consistently work as contemplated. It is possible, however, to find solutions that have a high probability of success".

This general theme is present in many papers. The concept of smoke control is feasible from a theoretical analysis. However, due to unexpected conditions, subtle or major design alternatives, poor construction techniques and faulty equipment, smoke control has very few documented success stories.

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These systems are inherently much too complex to ever achieve a reliability factor close to sprinkler systems. As such they can only be considered as a useful aid, if functional at the time of the fire, but not as an essential ingredient to the total fire protection of the structure.

Detection and Alarm Systems

There has been an increased emphasis within the building code on improved early detection and fire alarm systems. If both systems are properly designed and installed, they greatly increase the built-in fire safety of any building. The Alberta Building Code now requires these systems in new construction.

Unfortunately, with a few exceptions, the current requirements are not retroactive for many existing buildings. The Alberta Controlled Buildings and Residential Occupancy Building Regulation 317/79 requires alarm systems to be upgraded only in assembly, schools, hospitals and group homes. There are many alarm systems in existing residential, office, warehouse and manufacturing complexes that are inadequate by today's standards. There is no current legislation to enforce the upgrading of these systems.

The Controlled Building Regulations also requires the installation of smoke alarms and smoke detectors in the suites and corridors of existing residential buildings other than one and two family dwellings.

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The philosophy behind early detection and an adequate alarm system is simple. It assumes that, if people are informed of a fire situation quickly, they will respond properly to either extinguish a small fire or evacuate if necessary. Unfortunately there are a substantial number of incidents which prove that theory incorrect.

A 1979 report by researchers from the New York Medical Centre states that "people do not always realize that their lives are in danger when warned of a fire, and do not always behave accordingly". Individuals tend to overestimate the size of fire they are capable of extinguishing, and to underestimate how quickly a fire can intensify and spread.

Occupants may be frightened by the presence of a large fire or repelled by high heat, but perceive little danger from smoke, yet over eighty percent of fire fatalities are caused by smoke inhalation. Many of today's synthetic materials create high toxic fumes which can be fatal after a short exposure. As well, all fires generate carbon monoxide which can swiftly impair one's judgment and co-ordination.

Obviously, early detection is essential to life safety, but can only be effective in itself if coupled with the immediate initiation of proper response.

The N.F.P.A. has stated that "detection equipment neither prevents fires nor puts fires out. All the detection equipment can do is warn occupants that there is a fire and they had better leave the building - fast. If the occupants are

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unresponsive, if they don't know how to react in a fire, if they have not developed an escape plan, the detection equipment may do them little good".

In the majority of cases, smoke alarms are effective but their success rate is by no means 100%, and therefore they cannot be considered acceptable as the sole protection system. A compatible combination of early detection alarms and automatic extinguishing would best provide for fire safety, both for life and property.

Manual Suppression

The Alberta Building Code requires the installation of certain firefighting equipment for use by building occupants. Except for one and two family dwellings, the code requires the installation of fire extinguishers, the number and location of which are determined by building size and occupancy. Also, in many buildings, there is a requirement for occupant access to standpipe hoselines.

With this equipment, it is assumed that the building occupants will be able to extinguish, or at least control many types of fire without, or until, the arrival of trained firefighters. However, in the experience of the Fire Service, untrained or semi-trained persons are liable to overestimate the size of a fire they can fight themselves. They also do not appear to appreciate the speed with which a fire can grow. If these misjudgments are coupled with a delay in contacting the Fire Department, and evacuation of the building, the scene is set for a large life and/or property loss.

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Further, because of the materials now commonly used for interior furnishings, firefighting by occupants can pose particular dangers.

A fire which killed 10 persons and injured 53 others in a Woolworth's Store in Manchester, England, on 1979 05 08, started in a furniture storage area. Because of the rapid and intense fire development, investigators determined that the only manual suppression that could have been effective would have required a trained person at the point of origin with a charged hose line or fire extinguisher suitable for the fuel involved. That fuel, the polyurethane padding in furniture upholstered with polypropylene fabric, is typical of that which can be found in most residences, offices and other occupancies today.

As well as firefighting equipment for use by the building occupants, the Alberta Building Code contains provisions that are intended to assist public Fire Departments in their firefighting efforts. Most particularly these provisions relate to firefighter access, and an internal standpipe water distribution system. It is a basic premise, of course, that the sooner the application of water to a fire can commence, the greater the opportunity for rapid extinguishment. However, the code fails to recognize the time required to commence manual extinguishment. How long will it take the trained firefighting force to start applying water to the fire? The need to first assist in evacuation, the need to move heavy equipment manually to upper floors in structures over three storeys in height, are time factor problems of considerable magnitude.

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Rapid fire development in open areas of the size permitted under the Building Code can result in fire of such magnitude that it severely taxes the abilities of firefighters who must suppress it by manual means. Such fires require large numbers of firefighters merely for fire control. One such recorded high-rise building fire which occurred in Los Angeles required 300 firefighters before extinguishment was achieved. Even with this number of men, the fire spread to the floor above. Had a rescue operation also been required at this incident, with its time delay factor, it is difficult to predict what the end result might have been.

To undertake a manual fire suppression operation of this size would be beyond the capabilities of many Fire Departments. For example, the Fire Department in Lethbridge attempted to get an automatic sprinkler system installed in a 14 storey Senior Citizen's Apartment. The Department's justification for this was a recognition that they did not have the resources to successfully cope with a fire emergency in that building. The developer, the Alberta Housing Corporation, argued that since the Alberta Building Code did not require an automatic sprinkler system in such an occupancy, there was no need to have one. The courts supported the Alberta Housing Corporation.

THE CASE FOR AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS

The previous sections of this report have outlined the implications on life safety of human behaviour in fire situations, how people abuse presently required fire protection systems in buildings, and the dangers posed by the furnishings and fuel load carried within modern structures. Further, the fire

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safety provisions of the Alberta Building Code have been discussed, and differences between their theoretical and practical applications have been considered.

That early detection of a fire situation is imperative to life safety, goes without question. Automatic early warning systems have already proven their worth in saving lives. However, in isolation, these early detection devices have again shown weaknesses due to the effects of human behaviour. Repeating the reference to the N.F.P.A. statement in this report on Page 17, "detection equipment neither prevents fires nor puts fires out....If the occupants are unresponsive, if they don't know how to react in a fire, if they have not developed an escape plan, the detection equipment may do them little good".

This gives rise to the contention that the necessary adjunct to automatic early detection systems, therefore, must be automatic early suppression. Operating in tandem, these systems can respond well to the problems posed by adverse human behaviour patterns, both in abuse of fire separations in buildings and in response to fire situations. Further, they can respond well to the dangers posed by furnishings and fuel load found in modern buildings, and can overcome those weaknesses discussed in this report in fire safety Code requirements as they presently exist.

The Record of Automatic Suppression Systems

Automatic sprinkler systems have been providing a high level of fire protection in industrial and commercial occupancies for the past one hundred years. In North America, sprinklers have been successful in controlling or extinguishing 96.5% of the

fires in such buildings. In Australia and New Zealand, where sprinkler systems have been in use for the past eighty-two years, records show that 99.5% of fires in high rise buildings were controlled or extinguished by these systems.

Although primarily intended for property protection, automatic sprinkler systems have also achieved an excellent record for life protection in those buildings in which they have been installed. Still, in Alberta as elsewhere, the Building Code appears to adhere to the perception that automatic suppression systems are primarily a means of property protection, whereas the Code is perceived to be a life safety document.

Automatic Sprinklers for Residential Use

Due to the emphasis that has been placed on protection of mercantile and industrial properties relative to sprinkler systems, most of the standards for the design and installation of such systems have been oriented toward this application. Within the past few years, however, efforts have been made to prepare a sprinkler design and installation standard for residential occupancies, the occupancies in which the great majority of fire deaths occur. Various studies have looked at the water flow required to control or extinguish residential fires. Also, it has been determined that the sprinkler heads used in commercial occupancies would not react quickly enough in residential applications. Therefore, several so-called "quick acting" sprinkler heads have been developed, designed to react before temperatures and toxic gases have built up to life threatening levels.

Based on a program sponsored by the United States Fire Administration, economical sprinkler systems for all residential uses have now

become a reality. Used with the smoke detectors which, over recent years have been incorporated into many Building Codes as essential to residential occupancies, these systems appear to be the most practicable way to achieve the optimum level of life safety currently available.

Economic Considerations

A sophisticated economic analysis of various fire protection measures is beyond the scope of this report. It should be noted, however, that some attempts to do such analyses of fire safety strategies have been made by other bodies. Two of these, which focus on the subject of Automatic Detection and Suppression, are as follows:

At the University of Maryland, a study was conducted on the effectiveness of improving the resistance of upholstery fabrics to ignition by cigarettes. The cost of this change was compared to the costs of installing smoke detectors. In calculating the benefits, the economic costs of deaths and injuries were based on medical costs and loss of earnings. This study concluded that smoke detectors were a cost effective strategy, whereas improving the ignition characteristics of upholstery materials was not.

A group from John Hopkins University carried out a study of 117 residential fires in the State of Maryland and Washington, D.C. A part of this study attempted to establish what effect various fire safety strategies would have had on the results of these fires. This study indicated that a sprinkler system was most effective in reducing deaths, injuries and property loss. Installation of smoke detectors with a direct connection to a

central agency was second in effectiveness. Smoke detectors without the remote alarm feature was the least effective but still was credited with substantial benefits.

The point of these two studies is not so much the results that they produced, but rather that they produced results which are supported by some documentary evidence as to effectiveness and costs of various fire safety measures.

Also, in considering the matter of economics relative to fire safety systems, the indirect costs of fire cannot be ignored. It is only recently that in-depth research into these indirect costs of fire has begun, but already some of these studies are producing some disturbing results. Indirect losses from fire have been estimated at between 25% and 400% of the direct property losses.

Again, costs of fire protection systems must take into account the impact of such systems on the traditional method of providing fire safety through the services of the Municipal Fire Department. As cities grow larger, and buildings become larger or taller, or both, the demands for these services increase. In an attempt to ease the burden on their municipal budgets of the increasing costs of fire protection services, two municipalities in the United States, Fresno, California and Virginia Beach, Virginia, began a program of requiring automatic sprinklers for certain types of buildings in certain of their areas. As a result of these programs, both municipalities have realized savings in the operation of their Fire Departments. These savings have resulted from a reduced level of equipment and manpower required for sprinklered buildings in high density areas.

The Quest for Built-In Fire Protection

While the recent multiple death fires mentioned at the outset of this report have focused attention on built-in fire protection, a variety of Government Commissions, independent bodies, and Fire Service personnel have been recommending such measures for many years.

Sprinkler systems were recommended in a 1918 report titled "Fire Waste in Canada", by J. Grove Smith. This report was written on behalf of the Canada Commission on Conservation, one of whose members, it is interesting to note, was then President of the University of Alberta, Henry Marshall Tory. Following a series of statistics relating to fires and fire deaths in Canada and the U.S., the report states "with such substantial evidence of the efficiency of automatic sprinklers in protecting life, it is perfectly justifiable to maintain that all buildings in which large numbers of people gather for work and recreation, and all institutions in which the sick, blind and aged, criminal and insane are confined should be so equipped. . . Safety by rapid exit from a building depends entirely upon the self possession of the occupants and the time at their disposal. These factors do not, however, affect the situation where automatic sprinkler protection is provided. By operating independently of human assistance, and checking, even where they cannot immediately extinguish fire, automatic sprinklers guarantee the greatest possible security against loss of life".

Fifty-five years later, the report on the National Commission on Fire Prevention and Control titled "America Burning" which went before Congress in the United States in 1973, recommended

the use of early warning detectors (smoke automatic fire extinguishing systems for low-rise buildings in which many people

In the Fire Journal of September, 1979, "current research has indicated that low may be very effective at extinguishing or fires", while in that same issue, in an Fatalities from Unwanted Fires", authors "Installation of inexpensive domestic spr smoke detectors may prevent an optimum and economic losses simultaneously". The examples of the many statements which have long period of time in support of automatic in buildings.

RECOMMENDATION

Having dealt with factors involved in fire fire protection systems in buildings as the Alberta Building Code, and with the and suppression systems, this report contains recommendation:

that Alberta Regulation 31779 under the requiring smoke detectors in all occupancies two family dwellings, with sleeping occupancies (1977 27 28) and the Alberta Building Code in all these occupancies with sleeping occupancies (1977 27 28), including one and two family to include the requirement for automatic all multi-family occupancies, institutional buildings more than three stories above

Prepared by the Edmonton Fire Department
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