Testimony of Rhode Island Builders Association
Rhode Island Building Code Standards Committee
RISBC-2 – State One & Two Family Code
March 4, 2010

The Rhode Island Builders Association represents approximately 1,100 member companies comprising the residential construction industry here in the state. In addition to builders and remodelers, our membership also includes subcontractors, suppliers, engineers, architects, lenders, real estate management and sales professionals.

We are here today in support of the Rhode Island amendments to the 2009 International Residential Code, as amended by Regulation SBC-2 before you today. Passage of SBC-2, as proposed, would remove the mandatory requirement for sprinklers in 1 & 2 family homes and provide for their installation at the request of the buyer. This action would also add Rhode Island to the list of seven other states that have already declined to adopt mandatory fire sprinklers in their residential building code.

We support the proposed regulation as we believe that an increased emphasis on smoke alarms can have a greater effect on life safety than the addition of sprinklers in 1&2 family homes.

The basis of our position is the belief that any regulatory action should be in response to a broad public need where there is no equal or better alternative. Contained in the 2009 IRC are two areas that would significantly impact our industry. Both the energy efficiency requirements and the inclusion of mandatory sprinkler systems would result in sizeable additions to construction costs with little, if any, increase in market value.

We can agree, however, that increased energy efficiency is a national imperative and that 1 & 2 family houses can play a measurable role in reducing fossil fuel emissions and our reliance on foreign oil. However, we see no comparable imperative for the inclusion of sprinklers in these same homes. That is to say, we see no sizeable improvement in life safety when compared to costs and other viable alternatives.

As for increasing market value, some customers are beginning to ask our members about "green building" and energy use but they aren't asking about sprinklers. Some customers even react negatively at the idea of a sprinkler system in their house particularly when faced with the increased cost. In today's declining market, therefore, costs that do not add market value would have to be absorbed by either the builder or the land owner. The alternative is that capital that would have been invested in housing, will go to other more profitable opportunities.

2008 ICC Final Action Hearings

While increased energy efficiency is in the code to address a broad public need, sprinklers were approved as a result of an organized, single purpose effort.

The voting process at the September 2008 meeting of the International Code Council drew wide criticism due to an influx of voters for one particular purpose. Prior to consideration of the sprinkler provisions, vote counts for individual code changes or additions ranged from just under 150 to slightly over 200. When the two mandatory sprinkler provisions were considered the next day, the vote count was over 1,700 and 1,600 for these two items. Following the sprinkler votes, counts on code items again returned to the 200 hundred levels. By all appearances, mandatory sprinklers for 1&2 family homes are in the code simply as the result of a well organized campaign to put them there.

Sprinklers are a Very Costly Addition

Others today will address our concern over the high cost of sprinkler systems and the additional difficulties that will be encountered by the large proportion of Rhode Island houses not serviced by public water.

We had a sprinkler system designed for a modest sized house and were alarmed by what we were told about cost. The Fire Protection Research Foundation estimates that sprinkler installation and supply costs range from $.38 to $3.44 p/sprinkled square foot (*Home Fire Sprinkler Cost Assessment* – September 2008). Quoted to us for the installation alone however, was on the high end of this range and did not include connection costs to a public water system or additions to on-site capacity for well systems.

Regardless of the actual hard costs, any additional expense will add ancillary financing costs during the construction and sale period, additional sales commissions and overhead and profit. While these costs will vary, they add anywhere from 15% to 20% to the actual hard costs of the installation.

But our opposition to sprinklers goes beyond cost issues alone. With residential fire deaths steadily decreasing we question how mandatory sprinklers meets the broad public needs test. We submit that smoke alarms are an effective alternative at providing early warning and that increased smoke alarm use in the much larger inventory of existing homes will yield better life safety results at a much lower cost than mandatory sprinklers in the relatively few new homes.

Fire Deaths are Decreasing

Attachment A shows that the long term trend in residential fire deaths has been steadily decreasing for over the past 30 years. According to the NFPA, US fire deaths declined by 56% in the period from 1977-2006 (*Trends and Patterns of US Fire Losses – NFPA September 2007*).

While impressive, this doesn't tell the entire story as the population increased by approximately 33% during this period. Stated on the basis of fire deaths per million of population, fire deaths declined approximately 66% during the last 30 years.

According to the U.S. Fire Administration, annual 1 & 2 family fire deaths declined from 3,470 in 1996 to 2,570 in 2005. That's 900 lives or almost 26% in just ten years (*Residential Structure and Building Fires* - October 2008).

Attachment B illustrates that the long term trend in house fires has also been downward. This chart is interesting as it shows that 1&2 family fires declined by about 53% from 1980 to 2006; even though single family units increased by almost that same percentage.

New Homes are Safer

We believe that a major factor in this trend is that new homes are much safer than they were 30 years ago. Not only do they have hardwired, battery backed up, interconnected smoke alarms but newer homes also have safer electrical systems and safer and more effective heating systems which result in less reliance on space heaters. Additionally, new homes have improved egress, fire rated doors, fire blocking and separations and are subject to rigorous inspections throughout the construction period. These improvements have all contributed to reducing fire deaths.

A mandatory sprinkler requirement in new homes would provide additional protection only to those who are able to afford a new home and it does nothing to address the increased threat of fires in older homes.

Rhode Island has Fewer Fire Deaths

Attachment C supports our position that mandatory sprinklers do not address a broad public need, particularly here in RI. While we have been inundated with national studies that ranks Rhode Island at the bottom of every state comparison on any number of topics, we can be proud of the fact that this state is the second safest state in the country in terms of civilian fire deaths per million of population.

In 2006 the US average was 13.2 deaths per million. European countries are said to be safer at around ten per million. The U.S. Fire Administration ranks Rhode Island at not only less than ten, but less than five fire deaths per million population. (*Fire in the United States 2003-2007 – US Fire Administration October 2009*).

Smoke Alarms are an Effective Alternative

In an attempt to look further into Rhode Island's fire safety record, RIBA obtained fire data from the Nation Fire Incident Reporting System for the latest 5 year period available. NFIRS has been in existence since 1976 and is used by the fire service, government agencies, private industry organizations and insurance companies.

As a voluntary reporting service, about two thirds of the departments participate nationally. We found that only ten of Rhode Island's seventy nine departments participated as of 2007 and fewer still in earlier years. As this is provides wholly inadequate data on which to find that mandatory sprinklers in 1 & 2 family homes serves the broad public need, we extended our examination to national data to get a better sense of fire deaths.

Attachment D is the result of our inquiries and demonstrates two major points. One is that smoke alarm systems, as they are built into new homes today, are effective in reducing fire deaths and secondly, that the addition of mandatory sprinkler systems in new homes would return little in life safety benefits when compared to greater smoke alarm use.

We reviewed over 400,000 unconfined fires in 1 & 2 family homes reported during the five year period from 2003-2007. The death rate in this population was a little over 1%. Fire deaths reported in homes equipped with hardwired, battery backed up smoke alarms dropped to less than one half of one percent (.42%). Where these smoke alarms were also reported as having operated, the death rate dropped again to just over a quarter of one percent (.28%). Stated another way, the occupants of new homes as they are delivered by our members had a 99.72% survival rate.

Apparently, the NFPA believes that smoke alarms are effective as well. Their January 2008 report on smoke alarms states that, "…a working smoke alarm in a reported home reduces the risk of death by half…" *Home Smoke Alarms – The Data as Context for Decision* (NFPA January 2008)

Interestingly, the same report continues,"… because there is evidence that working smoke alarms often act so early that they convert what would have been a reported fire into a very small unreported fire, the potential savings from universal working smoke alarms could be even larger."

That may be a reason why people don't ask our members for sprinkler systems. They feel comfortable enough with the fire safety features built into their homes already.

The final point we wish to make on Attachment D, is that the difference in the slope between the first and second points versus the second and third points suggests a very small life safety return for improvements on the right side of the chart versus a much larger life safety improvement resulting from gains on the left side.

Those left side gains could be realized by operating, interconnected wired and wireless smoke alarms which can be retrofitted into existing houses and apartments of any age. These units are available online or at most of the box stores for around $40 each.

They are not all hardwired and people will have to take some responsibility for the safety of their families, but they are interconnected and they do represent a viable, affordable and effective alternative to adding sprinkler systems in already safe homes.

According to NFPA President, James Shannon, "NFPA's residential sprinkler campaign is attracting a lot of interest among people who share our belief that requiring sprinklers in new one and two family homes is the next logical step in reducing fire deaths..."

We don't see the logic in this approach at all. By the NFPA's own estimates, almost 900 lives could be saved each year with universal smoke alarm use yet they choose to promote expensive fire safety requirements which are deep in the area of diminished returns.

While Rhode Island had little data to work from, we sampled the 1&2 family addresses where we could establish the age of properties with fires. Over 87% of the sampled fires were in homes build before 1997 when the code required the smoke alarm systems in use today.

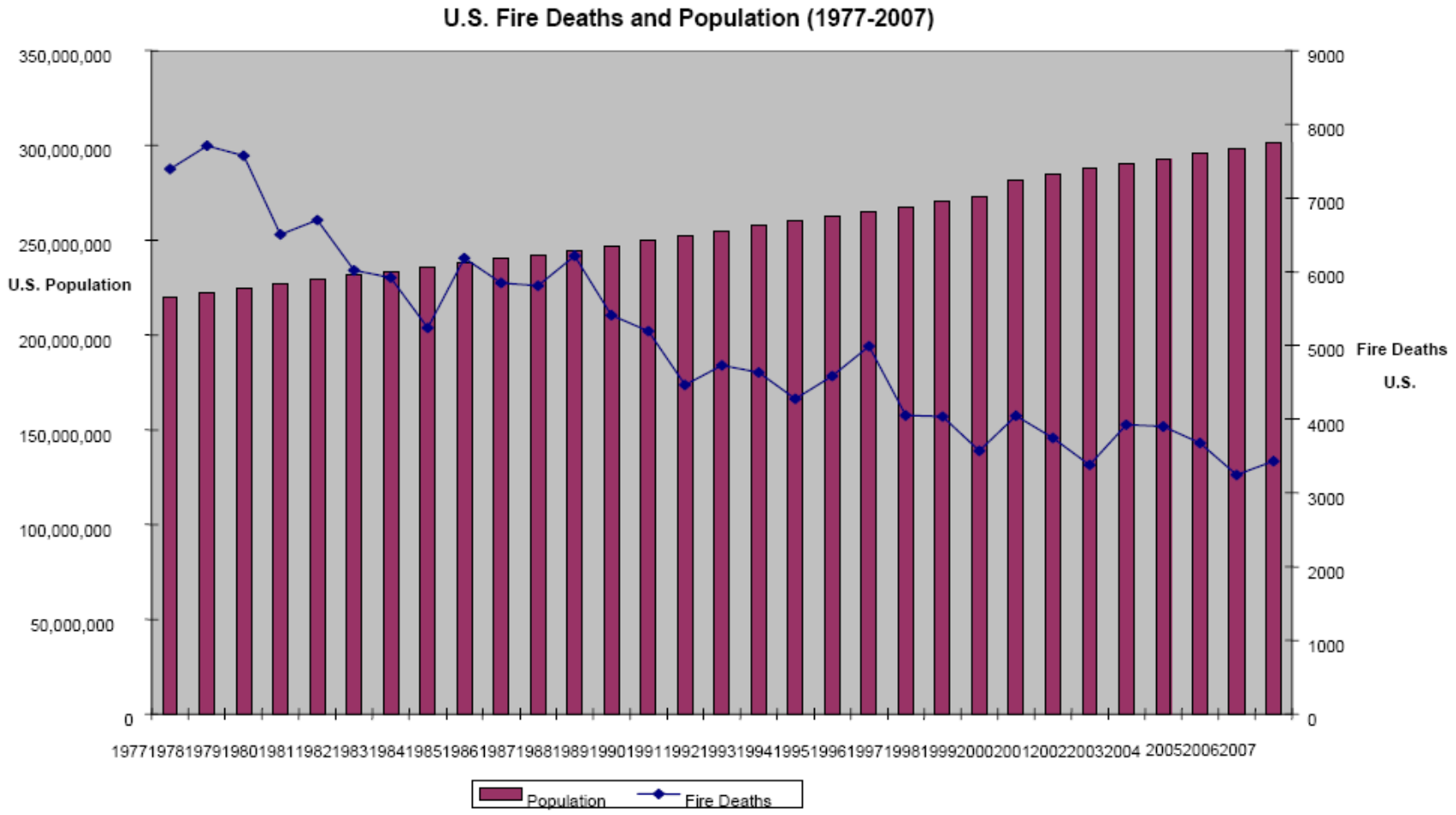
The NAHB estimates there are slightly over 313,000 1&2 family homes in the Rhode Island. If only 80% our housing stock exists with older smoke alarm systems, we don't see the logic in making the 701 houses that were built in 2009 safer when approximately 250,000, 1&2 family houses exist with older, possibly non-functioning or no smoke alarm systems at all.

With the fire service in every community, they are uniquely situated to conduct an equally aggressive campaign to educate people about the benefits of operating smoke alarms and the improvements in smoke alarm technology. They could knock on every door, be in every school, at every town gathering and in every local paper telling people about the life safety benefits of early detection.

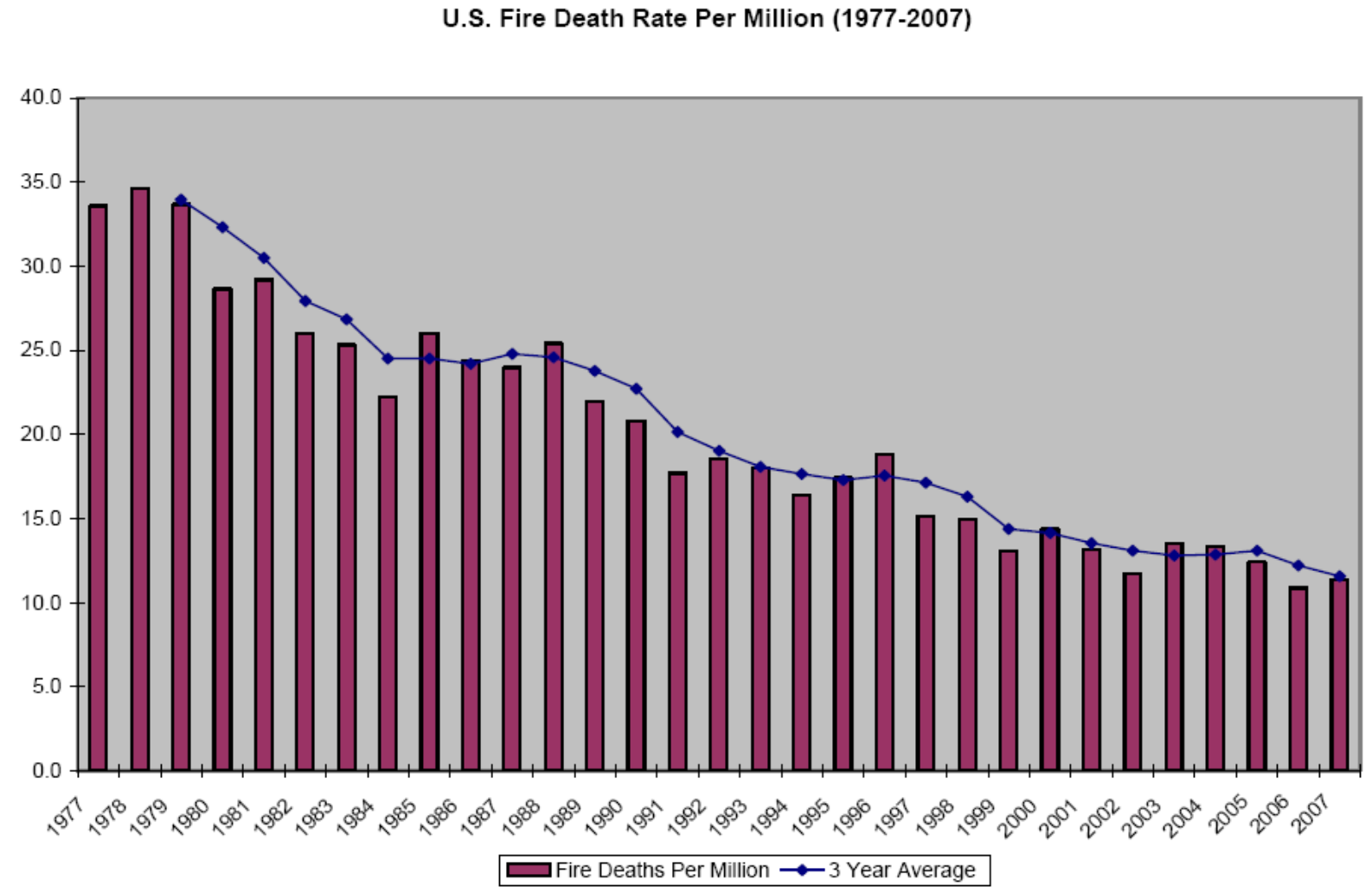
Our position is simple. An interconnected smoke alarm system can be installed in houses and apartments of any age, is available to people at all income levels, and is shown to be an effective and affordable, life saving alternative to expensive sprinkler systems that would be available only to those few who buy new houses.

That sounds to us more like the next logical step in reducing fire deaths.

US Fire Deaths



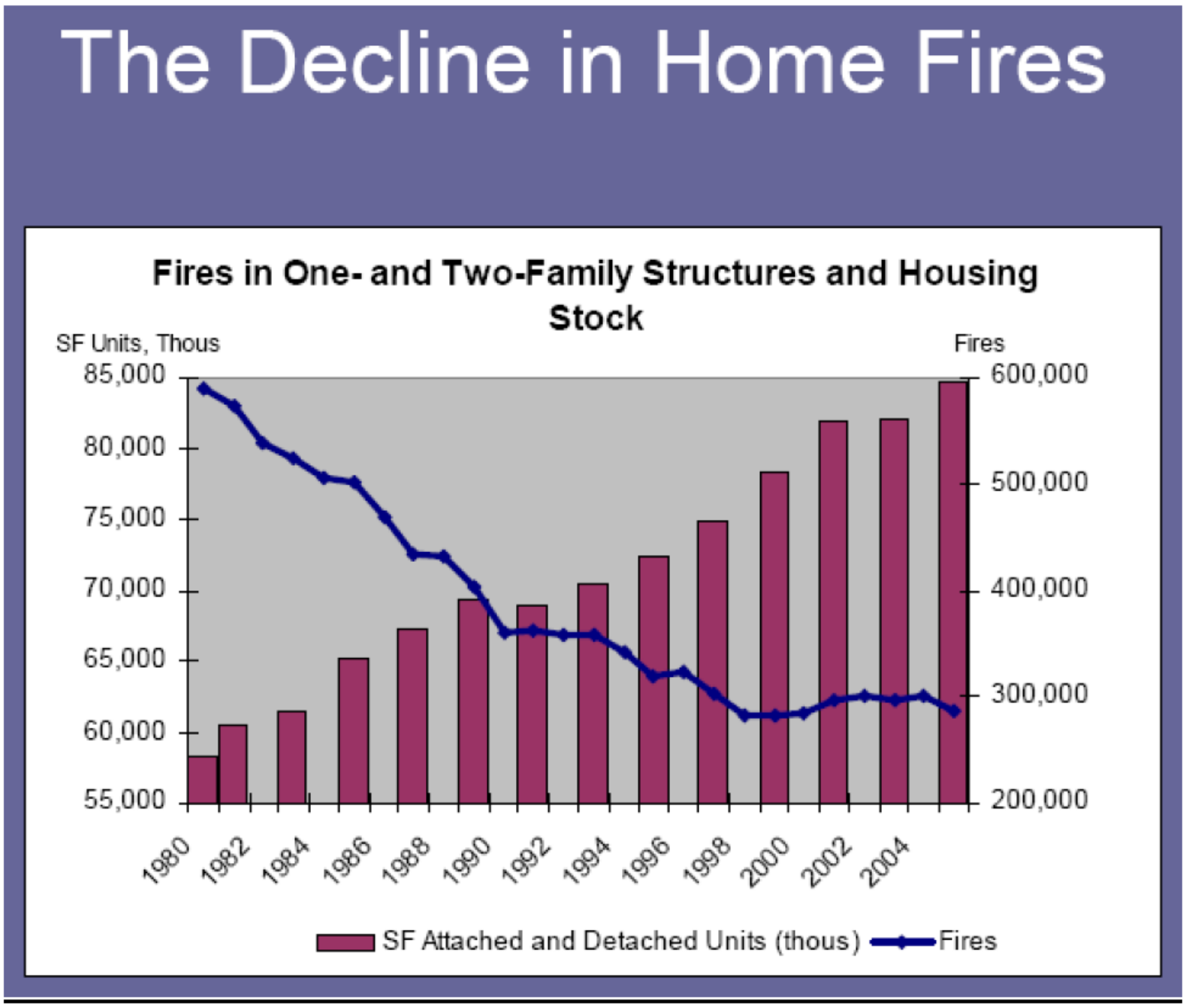
Source: National Fire Protection Association



Source: National Fire Protection Association

Attachment A

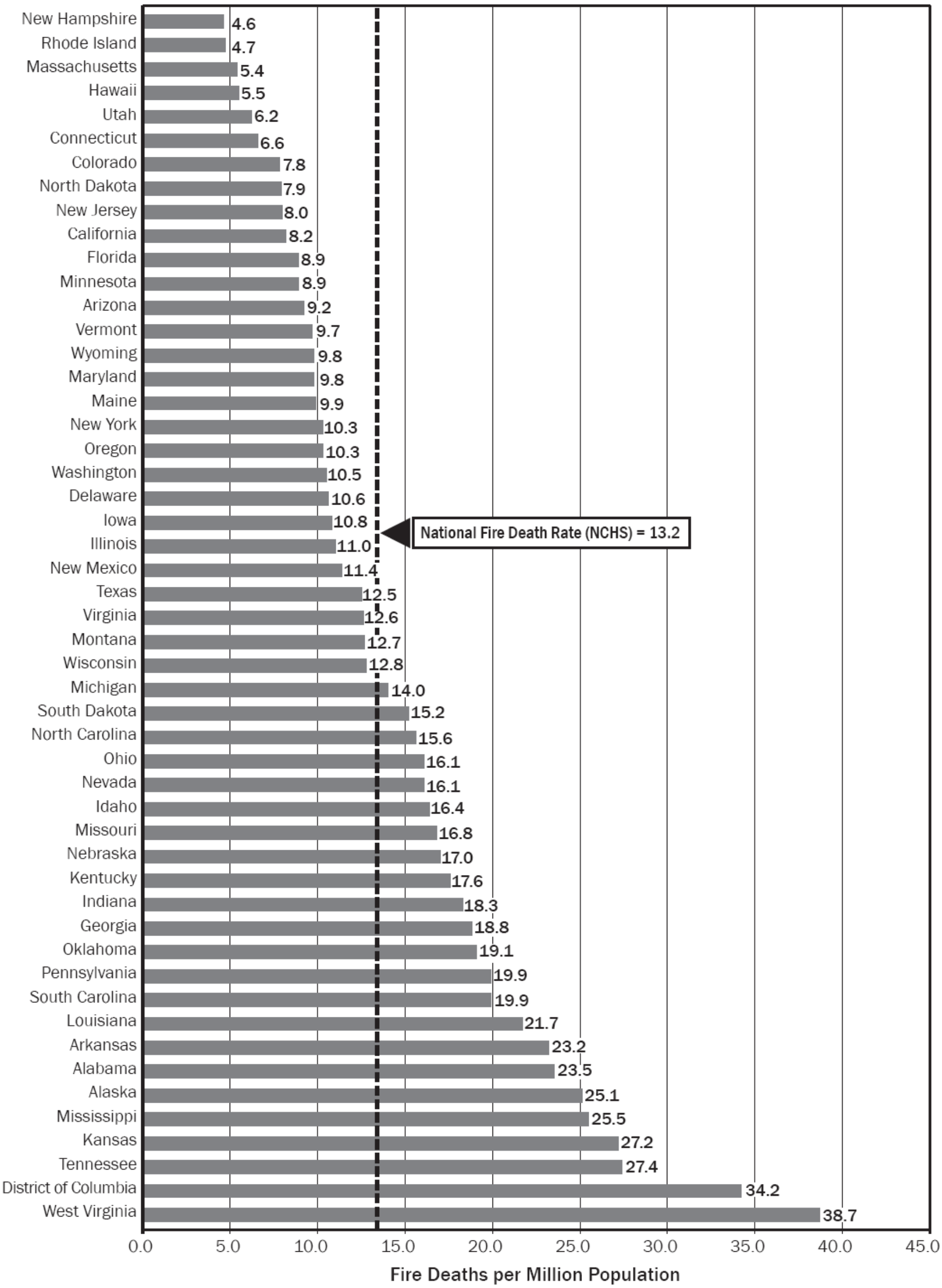
Home Fires are Decreasing as Housing Stock is Increasing



Source: NAHB

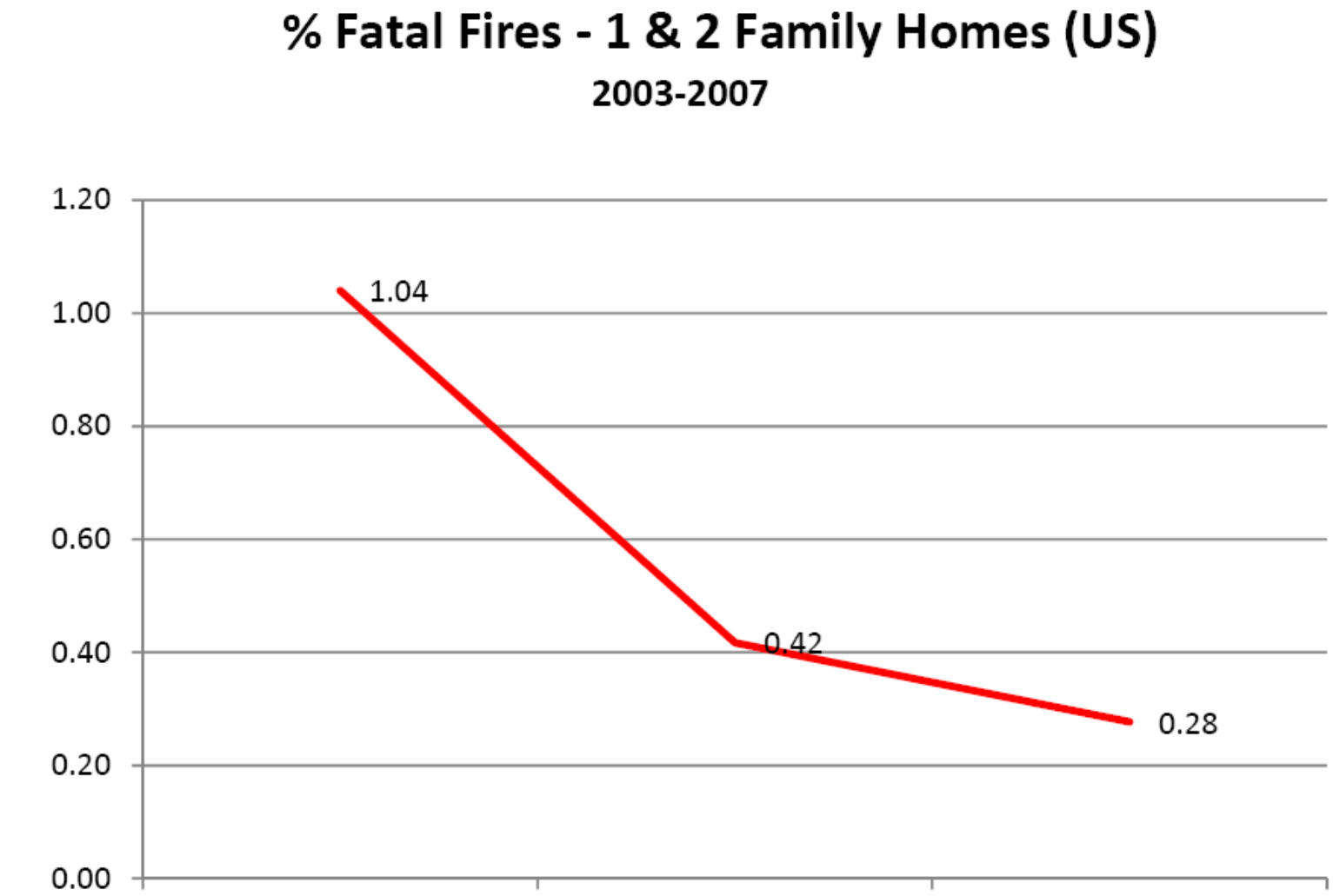
Attachment B

Figure 5. Rank Order of States by Civilian Fire Deaths per Million Population (2006)



Sources: National Center for Health Statistics and U.S. Census Bureau.

Attachment C



	# Fires Sampled	Hard Wired Detectors	HW Detectors Operated
# Fires	414,350	25,429	20,231
# Deaths	4,309	106	56
% Fire Deaths	1.04	0.42	0.28

Source: US Fire Administration - NFIRS database

Prop_Use= 419

Inc_type= 111

AID=1,2,N

Attachment D