September 11, 2008

Sent Via E-Mail To: wtc@nist.gov
And Via Fax to: 301-869-6275

WTC Technical Information Repository
Attention: Mr. Stephen Cauffman
National Institute of Standards and Technology
Stop 8610
Gaithersburg, MD 20866-8610

Re: Public Comments of NIST Reports NCSTAR 1A – “Final Report on
the Collapse of World Trade Center Building 7”, and
NCSTAR 1-9 Volume One and Two, “Structural Fire Response and
Probable Collapse Sequence of World Trade Center 7”

Dear Mr. Cauffman:

Pursuant to the instructions contained on the NIST website, I offer the attached public
comments relating the referenced documents.

Please recognize that due to the limited three week time-frame for public review of the
reports, it’s entirely possible that some of my concerns may be readily answered in the
documents. However, even if some can be reasonably answered, I believe all
comments must be adequately resolved in order to put this issue to rest, as it has far
reaching implications for the future of structural design.

Thank you for allowing the public to offer this input.

Very truly yours,

Jonathan H. Cole, P.E.

JHC:pec

Attachment
PUBLIC COMMENTS
For
THREE DRAFT REPORTS – WTC 7

NIST NCSTAR 1A: “Final Report on the Collapse of World Trade Center Building 7”

NIST NCSTAR 1-9: “Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7” - Volume 1

NIST NCSTAR 1-9: “Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7” - Volume 2

Prepared and Submitted
By:
Jonathan H. Cole, P.E.
614 Palomino Trail
Englewood, FL 34223
jc@jonsbarn.com

September 11, 2008
Report Number: NCSTAR 1A, NCSTAR 1-9 Volume One and Volume Two.

Comment 1:
Report Number: NCSTAR 1-9 Volume 2, Chapter 10
Page Number: Graphics of floor temperatures on Pages 400 through Page 410
Paragraph/Sentence: N/A Graphics only.

Comment: The building collapsed just before 5:21 P.M. (NCSTAR 1A page xxxi, first paragraph), yet all these graphics indicate floor temperatures at 5:30 p.m. and 6:00 p.m., or well after the structure collapsed.

Reason for Comment: Since the floors as a whole didn’t even exist after 5:21 P.M., it’s unusual that the graphics would indicate predictions of floor and beam temperatures well after the collapse event.

Recognizing that the temperatures are only estimates based on a computer model simulation extrapolated beyond the collapse, it is misleading to show graphics with the hotter floor temperatures that we know are impossible because the floors themselves simply did not exist as a unit after the global collapse.

Suggestion for Revision: If the above assessment is true, suggest the graphics indicating predicted fire spread and temperatures of the floors after the global collapse of the structure, be deleted on these pages and other pages.

Comment 2:
Report Number: NCSTAR 1A
Page Number: 10
Paragraph/Sentence: Last paragraph; the following sentence: ... “On the 11th and 12th floors, which will be seen later to have been the sites of significant and sustained fires, the mass of additional paper materials was described as very high.”
Comment: It is unclear how the mass of paper loading of these floors was ascertained and additional information as to the type and volume of material stored on these particular floors would be helpful, because the material loading of these floors was used as a basis for causing bigger and hotter fires. This appears to conflict with the prior Page 9 last sentence which states: ... "Presumably there were a variety of amounts and locations of paper, both exposed on the work surfaces and contained within the file cabinets."

And the unknowns by NIST about the details of these floors such as NCSTAR 1-9 Page 48: ... "However, despite the quality of the drawings and verbal descriptions obtained by NIST, there was some uncertainty regarding the nature of some spaces. Notably, the US Securities and Exchange Commission and American Express occupied all but the east side of the 13th floor, and NIST was unable to find people who recalled the nature of the unoccupied space."

And NCSTAR 1-9 Page 60 (for floors 11 and 12): ... "The mass of the furnishings per office was not known; the mass of additional paper materials was described as very high. As indicated in Section 9.3.1, the Investigation Team began with an initial estimation of the combusted fuel load of approximately 32 kg/m (cubed). Simulations of the fires with a lower combusted fuel load (Chapter 9) resulted in poor agreement with the observed spread of rates." And (same page) for floor 13: "There was little information regarding the combustibles on this floor, and there was little visual evidence for estimating the effect of different combustible mass loadings on agreement with the observed fire growth patterns. NIST assumed a combusted mass similar to that on the 11th and 12th floor."

Reason for Comment: "Very high" appears to be subjective and difficult to quantify. In addition NIST uses the word "presumably" as if it's just a rough estimate at best, since there is no way of knowing the true volume of combustibles. And if people didn't even know what occupied some of the spaces, then how could NIST assume that the "very high" estimation of material creating the larger fire that caused the eventual collapse (based on the NIST simulations) is even reasonable? Moreover, it appears that NIST is not even very certain of the fire intensities. (NISTNC STAR 1A, Page 28 states: "There were far fewer photographs and videos of WTC 7 than the towers; and, thus, the details of the WTC 7 were not as precise as for the fires in the towers."

Because the simulation did not match observed fires and associated heat needed for "thermal expansion", it appears that NIST used a predetermined conclusion to arrive at the necessary initial assumption. In other words, since NIST needed hotter fires to later cause the simulated first ever "thermal expansion" type of global collapse, and also assumed the fires were only from burning office material, then NIST assumed that there must have been more combustible mass then normal for an office to create the fire.

But what if the fires that were observed were from some other fuel source? Is it possible that an incendiary such as thermite was used to weaken the heavier core columns so they would be easier to blast later with a smaller shape charge, and could
that be the source of the observed hotter fires? Or what if smaller explosions witnessed earlier that day (refer to eyewitness testimony by Mr. Barry Jennings and Mr. Michael Hess, who were inside WTC 7), weakening the internal network of columns and beams before the global collapse at 5:21 P.M. were the cause of the observed fires?

Regardless, it would be helpful to know why NIST believed these particular floors contained a very high paper mass to reinforce the assumption that these floors burned more intensely causing thermal expansion and the ultimate global failure of the entire structure.

**Suggestion for Revision:** "On the 11th and 12th floors, which will be seen later to have been the sites of significant and sustained fires, the mass of additional paper materials was described as very high, however this was just an assumption made on the part of NIST to produce the fires observed that was eventually used in the NIST model simulation.

---

**Comment 3:**

**Report Number:** NCSTAR 1A  
**Page Number:** 16  
**Paragraph/Sentence:** Section 2.2.3, second paragraph, second sentence: "With the collapses of the towers fresh in their minds, there was concern that WTC 7 too might collapse, risking the lives of additional firefighters."

**Comment:** Prior to this particular day, no steel structure ever globally collapsed due to fire, and firefighters know this, which is why they rush in to burning skyscrapers without concern. If there was no historical precedent, how would the firefighters at the time have known this? Moreover, according to NCSTAR 1-9 Section 6.6 Page 299 "Between 11:00 a.m. and 12:00 noon approximately 40 FDNY members arrived at WTC 7 with orders to put the fires out. Inside they reported seeing small fires in debris in the core area and on the west side of the same floor of the building. A chief officer inside the building ran into other firefighters who had searched the upper floors and they reported that no one was inside the building. When the chief officer reached approximately the 9th or 10th floor, he had been inside the building about 20 minutes to 25 minutes. He received a radio call from another Chief Officer outside the building ordering him out of WTC 7. The Chief Officer was ordering everyone out of the building. The Chief Officer led the building and went to the FDNY Command Post and reported to the Command Post Chief that he believed the fires inside WTC 7 could be extinguished. Thus the Chief assigned to the firefighting tasks was sent back to extinguish the fires."

**Reason for Comment:** Typically, scientific research papers rely on the known facts and not assumptions of what individuals might have been thinking.

**Suggestion for Revision:** Suggest NIST deletes the sentence in its entirety as it could be construed by some as being unscientific.
Comment 4:
Report Number: NCSTAR 1A
Page Number: 16 Section 2.3 “General”
Paragraph/Sentence: Second paragraph: “Most likely, the WTC 7 fires began as a result of the impact from the collapse of WTC 1 at about 10:29 a.m.”

Comment: It appears that in addition to not really knowing the mass of combustibles on the floors, NIST is also uncertain of how the fires even started. For example, NIST NCSTAR 1-9 Page 194 states: . . . “Since fires were observed on the ground surrounding WTC 7, it is possible that potential ignition sources might have entered WTC 7 through openings created in the south and west face of the building during the collapses of the towers. NIST found no evidence to confirm this possibility, but the available data suggest that this was highly likely.”

And NCSTAR 1-9 Chapter 9, Section 9.1.1: . . . “Chapter 3 showed that there were no pathways for the flames and heat to pass from one floor to another, aside from the debris damaged area in the southwest of the building.” Because of the tremendous uncertainty, other fire initiation scenarios should be investigated. For example, the intentional setting of independent fires is possible or setting of fires due to incendiaries weakening critical columns in the hours before the global collapse, particularly since the fires appear to jump from location to location on certain floors.

It is also very possible that fires were started by explosions inside the structures well before collapse, and is consistent with the eyewitness accounts of people inside hours before the collapse. Moreover, an explanation of exactly how steel beams and columns thrown from the exploding WTC 1 could start a fire would be a benefit, since we know of several other adjacent structures at about the same radius as WTC 7 with steel impacts from the towers did not start any fires.

Reason for Comment: All possible explanations and reasons as to how the fires actually started should be addressed.

Suggestion for Revision: The exact source for the ignition of the fires is unknown, and it is unclear if it was from the impact from WTC 1 or possibly from some other ignition sources inside the structure.

Comment 5:
Page Number: 245 last paragraph and 246 first paragraphs
Paragraph/Sentence: . . . “The next time that flames were observed on the 13th floor was around 5:00 p.m., when intense burning was observed between windows 13-53D
and 13-54D, to the west of the center of the north face. A couple of minutes prior to the collapse of the building at 5:20:52 p.m., a jet of flames was pushed from windows in the same area. NIST found no evidence regarding the cause of this unusual behavior, but the behavior is similar to smoke and flame expulsions in the WTC towers prior to their collapses that were attributed to pressure pulses associated with structural changes (e.g. a partial floor collapse) occurring within the tower.”

Comment: There is a very good explanation for this unusual behavior that NIST should investigate; and that is, the pulses were caused by blasts of exploding charges, cutting the internal core columns just prior to the global collapse. This is far more logical and fits precisely with all the other evidence of a controlled demolition, than a “partially collapsed floor” pushing the flames out.

Reason for Comment: Although technically outside the scope of this report, the comparison by NIST to the twin towers for similar pulses of flames can also be explained with the following hypothesis that matches all known evidence for WTC 1 and WTC 2: The expulsions of flame and concrete dust in the WTC towers just prior to collapse were not at every floor but rather from about each third floor. Because of this, the expulsions could not be from a “pancake” or “piston” effect of collapsing floors, but rather were very likely the result of high explosives placed in the core columns at the weld points.

The tremendous energy from the blasts from the core columns not only pulverized the concrete floors (a gravitational collapse in the initial stage simpily does not have the necessary energy to pulverize the floors), but also pushed out flames in the initial seconds.

In addition, those high explosives placed in the core of the towers threw out huge segments of steel hundreds of feet away into the adjacent structures, including WTC 7; something an “office fire” has never done.

And because the pulses of concrete dust from the explosive charges in the towers were at roughly 30 foot intervals, one would expect that the resulting debris at ground zero would indicate similar lengths of cut core columns. This is precisely what was found at ground zero (not “pancaked” floors at all) further confirming this scenario.

The fact that the destruction of the corners of the towers lagged significantly behind the center portion of the floors as the structure exploded also proves that the pancake or piston type of collapse was impossible.

In addition, no block of upper floors could be seen “sledge hammering” down on the structure, as they too were vaporized on the way down to ground zero.

Moreover, the initial collapse of the 353 ton antennae in WTC 1 that was supported with a hat truss on the core columns fell several feet first, before the perimeter walls collapsed, confirming that the core columns had to have been cut first, all at the same
time. The fact that the antenna accelerated into the path of most resistance (the core columns), rather than slow down, indicates that the core columns were being cut at a rapid rate, generating the necessary energy to pulverize the concrete and allowing the towers to fall very close to free fall speed.

Finally, the fact that some of the inner core was seen momentarily standing after the floors fell, cut at about the 60th floor level (well below the airplane strike), indicated that the tower collapse simply could not have been from a "pancake or piston type" crushing effect. NIST did not investigate any of this evidence, stopping their investigation of the towers at "collapse initiation", rather than having the burden of explaining all the above phenomena.

Only pre-planted, rapidly timed explosives can explain all the known events of the collapses that day, and those same explosives also easily explain the unusual behavior of the flames and pressure pulses just prior to the global collapse of WTC 7.

**Suggestion for Revision:** "NIST will look into the possibility that internal explosives detonating just before collapse could be the source of the observed unusual behavior."

---

**Comment 6:**

**Report Number:** NCSTAR 1-9 Vol. 1

**Page Number:** Section 5.7.3 Distortion of North Façade Page 271

**Paragraph/Sentence:** "Since the majority of the window glass in the area of the movement was still intact, it is probable that the lighter area was the result of changing light reflections due to distortions of the façade, similar to those discussed earlier. Such distortions could be due to physical movement of the face or perhaps to pressure changes within the building. Whatever the cause, it seems clear that some type of disturbance began to move downward in the building at the same time as the east penthouse started descending."

**Comment:** NIST should investigate another very likely cause of the distortions noticed. A controlled demolition with internal explosions can create pressure waves distorting the facade of glass. The disturbance moving downward could have been created by well timed explosions, severing the columns and bringing the building down.

**Reason for Comment:** Only a controlled demolition easily explains all the evidence and events of the day. This shock wave is one more piece of evidence that is explained by a controlled demolition.

**Suggestion for Revision:** "This downward moving distortion may be the result of a controlled demolition. NIST will investigate this scenario further."
Comment 7:
Report Number: NCSTAR 1A
Page Number: 19 Section 2.4
Paragraph/Sentence: Second paragraph: The phrase: "... because water was not available."

Comment: Better corroboration is needed for this statement, because it appears that there is some evidence that water was available in the NIST Report.

Reason for Comment: Almost immediately after the total collapse virtually into its own footprint, there is a picture of several fire hoses spraying water on the cut up wall segments. If fire trucks are in the photo it is difficult to determine and yet, there appears to be a full stream of water spraying the debris pile. If there was no water in the mains, where did the firefighters get the water to spray the pile shortly after collapse? In addition there is a photo of a fire stream hosing down the area in front of WTC 7 before the collapse on Page 141 NCSTAR 1-9 Chapter 5 with what appears to be ample water pressure, at 1:30 p.m.

Suggestion for Revision: "... because of reports that water may not have been available, however, photographic evidence does not corroborate the report."

Comment 8:
Report Number: NCSTAR 1A
Page Number: 19
Paragraph/Sentence: Sixth paragraph: "This buckling process that occurred at temperatures at or below approximately 400° C (750 °F), which are well below the temperatures considered in current practice for determining fire resistance ratings associated with significant loss of steel strength."

AND

Fifth paragraph: "The heat from these uncontrolled fires caused thermal expansion of the steel beams on the lower floors of the east side of WTC 7, damaging the floor framing on multiple floors."

Comment: While heat does indeed expand steel and concrete, the primary method for deducing that the heat generated in WTC 7 was enough to "damage the floor framing on multiple floors" was based on model simulations where inputs could be easily "tweaked" to produce the desired results. Is there any physical evidence of the steel from WTC 7 to corroborate this model? Equally important, did NIST conduct any laboratory analysis, with a full scale beam-column set up in a furnace in an effort to replicate the simulation results? Since the model input can significantly affect the output and the conclusions are so remarkable; and since it the first time in history that a building globally collapsed allegedly due to "thermal expansion", a full scale fire test simulation is definitely in order.
Reason for Comment: Was there any specific physical evidence of distorted beam-column connections? Was there any physical evidence of damaged floor framing due to heat found?

It appears that this was a result based on a model simulation only, but not based on any physical evidence or testing whatsoever.

Suggestion for Revision: "One hypothesis is that the heat from these uncontrolled fires caused thermal expansion of the steel beams on the lower floors of the east side of WTC 7, damaging the floor framing on multiple floors. However, because the temperatures did not last for the minimum time necessary to generate the heat on the beam-column system for the model to predict that thermal expansion could have occurred, no physical evidence was found indicating beam joint failures; no testing was done to confirm the simulation; and the fact that thermal expansion never caused a global collapse on any steel structure, it is very highly unlikely that thermal expansion could possibly be the real cause of the structures global collapse."

Comment 9:
Report Number: NCSTAR 1A
Page Number: 19
Paragraph/Sentence: Last paragraph: "This movement (from thermal expansion) was enough to lose its connection to Column 79."

Comment: Thermal expansion of floor beams breaking its beam seat connection and then causing a global collapse has never happened before, and very highly unlikely. Structural engineers do not design connections for lateral forces from thermal expansion because it is so rare. No structure before or after 9/11 has ever globally failed due to "thermal expansion" and it's very doubtful if it was the cause of the collapse of WTC 7.

Reason for Comment: Structural engineers do not design connections for lateral forces for thermal expansion because it is so rare. Thermal expansion for a 53 foot beam with a delta "T" of 654 F (752 – body temp) is less then 2.7 inches.

Other pages in NCSTAR 1-9 indicate sag in the floor system due to the heat. (NCSTAR 1-9 Vol. 1 Chapter 8, Page 323: "Elevated temperatures in the floor elements led to thermal expansion, with or without thermal weakening and sagging, . . .")

The sagging effect is also indicated graphically in NCSTAR 1-9 Vol. 2 Page 56. Any sag effects need to be subtracted from the lengthening effects of thermal expansion. In addition any warping of the flange or web will also consume some distance and must be subtracted from any elongation and assumed forces of the thermal expansion. NIST is claiming that girders "walked off" their beam seats at the major connections with Column 79 (and others). But the elongation from thermal expansion, even if the sagging effects are ignored, is only a couple of inches at most; yet the beam seats are longer. How can
the girders "walk off" their beam seats if the seats are longer than the possible expansion?

Finally, any residual expansion distance, once the sag, warping, and torsion effects are subtracted is shared between each end of a beam and any lengthening or sagging is incrementally re-distributed throughout the network of adjacent beams and columns rendering elongations at any one particular location to be almost negligible; or well within the elastic limits of the connections.

Steel structure beam to beam, or beam to column connections have been riveted, bolted, welded or a combination thereof for over a hundred years, with no significant "thermal expansion" sheering problems during much hotter fires, which is one reason it's simply not necessary to include in any structural design analysis.

Because no steel structure has ever failed globally due to fire, and this fire was a cool office fire when compared to historical fires, the suggestion that thermal expansion of the floor beam system was the trigger for global collapse is highly suspect and definitely should not be considered the leading hypothesis; given the overwhelming evidence for a hypothetical blast scenario.

**Suggestion for Revision:** Delete sentence and all related (thermal expansion causing global collapse) conclusions in its entirety and dismiss this cause of failure, due to the fact that it is so highly improbable as to render it not credible to scientific scrutiny.

---

**Comment 10:**

**Report Number:** NCSTAR 1-9 Chapter 13 13.3 (16)

**Page Numbers:** 606

**Paragraph/Sentence:** Section 13.3, Paragraph (16) - "Hypothetical blast events did not cause the collapse of WTC 7. NIST concluded that blast events could not have occurred and found no evidence of any blast events."

**Comment:** Contrary to the above opening statement, it is apparent that adequate effort was not expended or was intentionally overlooked when compiling the evidence for a blast scenario. There are many layers of evidence for a controlled demolition and some of the issues that were overlooked include:

- No mention of eye witness accounts of personnel that were inside the structure reporting both hearing and feeling the effects of explosions, including a very credible witness, Mr. Barry Jennings, (along with Mr. Hess), who were trapped inside. (However NCSTAR 1A Section 3.4.1, Page 24 - third line and in other areas of the study, NIST does allow eyewitness accounts and personal interviews for other evidence; but not for the numerous accounts of blasts by eyewitnesses.)
• No discussion of eyewitness, Michael Hess, NYC Corporation Council (actually INSIDE the building) stating: "Another gentleman and I walked down to the 8th floor, where there was an explosion, and we've been trapped with all smoke around us for an hour and a half."

• No mention of all the explosions reported that day by the firefighters and contained in the City of N.Y. Oral Histories.

• No mention of the many many explosions reported by news anchors at the scene that day. Recommend NIST reviews the following video on "youtube": http://www.youtube.com/watch?v=ylgoXQWiSIM

• Reports from emergency workers need to be addressed including: "We were watching the building actually 'cause is was on fire'. . . . and . . . we heard this sound that sounded like a clap of thunder . . . turned around -- we were shocked to see that the building was ah well it looked like there was a shockwave ripping through the building and the windows all busted out . . . about a second later the bottom floor caved out and the building followed after that."

• And from Peter DeMarco, a New York Daily News Reporter: "At 5:30 p.m. there was a rumble. The buildings top row of windows popped out. Then all the windows on the thirty ninth floor popped out. Then the thirty eighth floor. Pop! Pop! Pop! was all you heard until the building sunk into a rising cloud of grey."

• No mention of the eutectic steel found on the site, FEMA reported: "The severe corrosion of and subsequent erosion of (steel) samples 1 and 2 are a very unusual event. A detailed study of the mechanism of this phenomenon is needed." And the "deep mystery" of sulfur found on the steel quoted from WPI - Transformations Spring 2002: "The New York Times called these findings "perhaps the deepest mystery uncovered in the investigation." The significance of the work on a sample from Building 7 and a structural column from one of the twin towers becomes apparent only when one sees these heavy chunks of damaged metal. A one-inch column has been reduced to half-inch thickness. Its edges--which are curled like a paper scroll--have been thinned to almost razor sharpness. Gaping holes--some larger than a silver dollar--let light shine through a formerly solid steel flange. This Swiss cheese appearance shocked all of the fire-wise professors, who expected to see distortion and bending--but not holes. A eutectic compound is a mixture of two or more substances that melts at the lowest temperature of any mixture of its components. Blacksmiths took advantage of this property by welding over fires of sulfur-rich charcoal, which lowers the melting point of iron. In the World Trade Center fire, the presence of oxygen, sulfur and heat caused iron oxide and iron sulfide to form at the surface of structural steel members. This liquid slag corroded through intergranular channels into the body of the metal, causing severe erosion and a loss of structural integrity."
Note: an office fire will not cause a eutectic state for the steel found by FEMA. Sulfur, from a thermite reaction, could very well cause this eutectic state.

- The peer reviewed air quality analysis that found that the air in the area indicated the use of explosives, found at this site: http://www.springerlink.com/content/f67q6272583h86n4/fulltext.pdf

- The dust samples with molten spheroids indicating the use of explosives, along with the dull grey/red chips of thermite found in the dust samples which can be reviewed at this site: http://www.911research.com/wtc/evidence/residues.html

- The symmetrical collapse pattern of WTC 7 indicating the use of explosives, and the fact that is very difficult to make a building fall in such a way using explosives, but has never fallen in such a way by gravity or fire induced forces alone: FEMA WTC Performance Study reports: “Demolishing the building so that it collapses straight down into its own footprint requires such a skill that only a handful of demolition companies will attempt it.” If it’s that difficult to create a perfectly symmetrical collapse with pre-planted charges, then its virtually impossible to make a structure fall this way due to an office fire and gravity alone; especially one that was partially weakened on its south west face due to impacts.

- The straight down, parallel fall of the roof line, indicating simultaneous dissociation of all 58 perimeter columns at virtually the same time. The NIST buckling simulation on one side would make the roof line tip, yet the roof fell parallel to the horizon.

- The analysis by Dutch demolition expert Danny Jowenko, indicates that it was clearly a controlled demolition.

- The small debris field that did little damage to the adjacent structures, indicative of a controlled demolition.

- The many reports of red hot or molten steel in the debris; that simply cannot be made molten by an office fire.

- No mention of FEMA Report 403, Appendix C that recommends further study of evidence of liquid steel that could be related to the cause of the collapse and should be studied further.

- No explanation what caused the pyroclastic flow of pulverized dust, indicative of a controlled demolition, and the energy it took to create that flow of dust. (NCSTAR 1-9 Vol 1 Page 286 states: “When WTC 7 collapsed, the dust that was generated mixed with air to create a dense mixture that flowed away from the site. The
resulting dust and debris-laden flow spread over many blocks of lower Manhattan.

- No mention of the "count down" by officials heard over the radio of the demolition reported by eye witnesses.

- No mention as to why Mayor Giuliani decided not to use his state-of-the-art reinforced command center that day inside WTC 7 specifically designed for such an event.

- No mention of how Captain Michael Currid, President of the Uniformed Fire Officers Association, knew ahead of time that the building was a lost cause. "Someone from the city's Office of Emergency Management told him that WTC 7 was basically a lost cause and we should not loose anyone else trying to save it." And Firefighter Vincent Massa said: "We hung out for hours waiting for 7 to come down."

- No mention of how the Mayor knew of impending building collapses when he said: "I went down to the scene and we set up headquarters at 75 Barkley Street, which was right there with the Police Commissioner, the Fire Commissioner, the Head of Emergency Management, and we were operating out of there when we were told that the World Trade Center was going to collapse. And it did collapse before we could actually get out of the building, so we were trapped in the building for 10, 15 minutes, and finally found an exit and got out, walked north, and took a lot of people with us."

- No mention of the BBC footage with Jane Stanley, a BBC Reporter, "live on the scene" at around 5:00 p.m. announcing the collapse of the Solomon Brothers Building over 20 minutes before it actually collapsed.

- No mention of the CNN foreknowledge and premature announcement of the collapse of WTC 7. "We are getting information now that one of other buildings, building 7, in the world trade center complex is on fire and has either collapsed or is collapsing. I. You to be honest can see these pictures just a little bit more clearly than I, but Building number 7 one of the other buildings in this very large complex of buildings that is the Trade Center... there were -- there were -- and that is the right way to put it -- there were the two towers, but then there are a number of support buildings around it -- retail spaces, restaurants, office space, garages, the trains come in from New Jersey bringing commuters taking commuters back, come into the complex that is the World Trade Center, and now we are told there is a fire there and that building may collapse as well, as you can see."
Accordingly, if no steel structure has ever collapsed due to fire and the fires inside WTC 7 were really not that extensive or hot, and firemen routinely enter and extinguish fires such as those experienced in WTC 7, then how did "they" know that the building(s) would come down? On the other hand, if someone knew that the building was rigged with explosives, and/or the final stages were being rigged in those hours, it would explain all known evidence very easily.

Reason for Comment: All of the above evidence linking explosives appears to have been grossly overlooked or intentionally ignored.

Without discussion of the above items, all of Section 2.3 as well as the entire NIST report, analysis and conclusions are incomplete and simply not credible to scientific scrutiny.

Suggestion for Revision: "Hypothetical Blast Events are the primary cause the collapse of WTC 7. NIST concluded that blast events must have occurred because no other hypothesis can explain all the known events, all the known evidence and all the testimony from eye witness accounts. Only a blast scenario addresses 100% of all known evidence, and therefore is our leading hypothesis."

Comment 11:
Report Number: NCSTAR 1A
Page Number: 32
Paragraph/Sentence: Section 3.4.5 Second to last paragraph. "Figure 3-9 shows an example of the extent of structural damage from the fires, in this case for the 13th floor. At both 3.5 h and 4.0 h, connections, floor beams, and girders were damaged or had failed at steel temperatures that were approximately 400°C or less, primarily due to the effects of thermal expansion. After 4 h of heating, there was substantially more damage and failures in the WTC 7 structural system than at 3.5 h of heating." And in the next paragraph: "However, it appeared likely the critical damage state occurred between 3.5 h and 4 h."

Comment: Exact input details of the NIST model were not provided for review. However, based on the above, it appears the modeling effort to reach failure mode of the connections required was at least a time of 3.5 hours at a temperature of approximately 400°C., or to put it another way, any time less then 3.5 hours or 4 hours would not cause a failure.

Reason for Comment: Based on Figure 3.6, Page 30 (NCSTAR 1A) temperatures near the floor system of Column 79 did not sustain temperatures of 400°C for a time in excess of 3.5 hours. Rather, this indicated a time of perhaps 2 hours.

In addition, according to Page 330 Section 8.4.1 (NCSTAR 1-9 Vol. 1): "Prediction and growth of building contents fires (Chapter 9) indicated that such fires did not persist at
any one location for more then about 20 min to 30 min., which is consistent with observations of fires in the windows (Chapter 5)."

Finally, Floors 12 and 13 (the SEC floors) were determined to be the hottest, yet: "Fire was first observed on the 12th floor, on the south side of the east face, at about 2:10 p.m." (Page 381 NCSTAR 1-9 Vol 2), and didn’t even begin to heat up the areas near Column 79 until around 3:00 p.m.

NCSTAR 1-9 Page 243 for the 8th floor: "As late as 3:22 p.m., there was no indication of fire in this area but about 17 min later a substantial fire spreading to the east was visible between windows 8-47C and 8-53C."

NCSTAR 1-9 Pages 244 and 245 state: 11th floor: “A fire was first observed at 2:08 p.m. on the east face.”, and for the 12th floor, a similar time.

For the 13th floor: “The first visual evidence for burning on the 13th floor was seen on the east face around 2:30 p.m”; less then 3 hours before the collapse.

And even more importantly, the floor temperatures predicted (Figure 3-8 Page 31 NCSTA 1A) indicate temperatures colder then 200° C as late as 4:00 p.m in the area of Column 79, and not until about 5:00 p.m. (20 minutes before collapse) does only a small portion of the floor area theoretically approach temperatures of 400 C. But the building collapsed at about 5:21 p.m. in the afternoon, about a half hour later, far less time than the critical 3.5 hour time used in the model.

If the entire analysis of the initial failure event is dependent on temperatures approaching 400° C that must exist over 3.5 hour period, and/or the fires did not last that long in the critical Column 79 area, then the entire foundation of the simulation appears flawed. And if the input of the model is flawed, the output results and conclusions are also flawed.

**Suggestion for Revision:** Add the sentence: “Because the time of heating was not sufficient or near the necessary time of 4.0 h to cause sufficient thermal expansion in the connections, this hypothesis for global collapse was abandoned.”

---

**Comment 12:**

**Report Number:** NCSTAR 1A

**Page Number:** 34 NCSTAR 1A Section 3.4.6 Global Analysis using LS-DYNA - third to last paragraph: "The first was based on NIST’s best estimate of both debris impact damage form" (sic from) “WTC 1 and the fire-induced damage as developed using the ANSYS modeling. This occurred at 4 h in the ANSYS computation.”

**AND**
Paragraph/Sentence:
Page 35 NCSTAR 1A - Paragraph 2: "The global analysis with fire-induced damage at 4.0 h most closely matched the observed collapse events, and the following discussion begins with the results from this analysis."

Comment: The heat applied for four hours to the floor system and floor beams did not last that long in the critical area.

Reason for Comment: If the heat did not last four hours in the area of Column 79, then there is no collapse initiation by “thermal expansion” and no trigger to start the global collapse due to fire.

If the above is true, the entire model, analysis summary and conclusions are wrong.

Suggestion for Revision: “The global analysis with fire induced damage at 4 h most closely matched the observed events and the following discussion begins with the results of the analysis. However, since the office fires in WTC 7 did not have duration of 4 hours in any one area, although the model results may have matched the observed events, the model input was not valid and therefore the entire model results were dismissed.”

Comment 13:
Report Number: NCSTAR 1A
Page Number: Page 35
Paragraph/Sentence: Last paragraph: "With no fires on the west side of Floors 10 through 14, the intact floor framing pulled the exterior columns inward and the interior columns fell downward. Loads from the buckled interior columns were redistributed to the exterior columns, which, in turn, buckled the exterior columns between Floors 7 and 14 within approximately 2 s. At that point the entire building above the buckled-column region moved downward as a single unit, resulting in the global collapse of WTC 7."

Comment: There are several problems with this hypothetical collapse sequence.

Reason for Comment: First, if the interior floors under the penthouse and surrounding Column 79 collapsed first, there is very little floor load to be redistributed to the exterior walls, particularly on the northwest, southwest and west side. If anything, the loads would become significantly reduced on the perimeter walls as there is no dead loading from the internal floors, nor of course any live loads imposed by occupants, wind or snow loads. The steel structures, in addition to being able to carry full loadings, are also designed with a factor of safety of at least double the maximum rated loadings, acting simultaneously. Probably this particular structure has a higher factor of safety since it was a reinforced emergency command center.
Secondly, Figure 3-14, indicates the most buckling on the westerly face with a severe kink between Floors 7-14. Any buckling of the perimeter wall columns by increased loading above, must by definition, shorten the distance between the top of the roof and the ground along the westerly wall, compared to the easterly wall. If the “top block of floors” remains fixed and level, then there can be no increase in vertical loading and no buckling of the lower walls. This shortening due to the buckling would be reflected in a roofline that would not be parallel to the horizon as it fell, but rather a tilted roof line relative to the horizon. We know from video that the roof fell parallel to the horizon and was definitely not tilted or at an angle.

In addition the twist of the entire easterly portion of the structure, indicated in Figure 3-14 as representative of the model, is not supported by the videos or photographic evidence of the collapse.

NIST then claims that: "At that point the entire building above the buckled-column region moved downward as a single unit, resulting in the global collapse of WTC 7." But to remain as a unit, one would expect to see a stack of pancaked floors in the final debris pile; with concrete floors stacked on each other crushed but intact, and furniture crushed between the floors. But that was not observed at the debris pile. Rather, steel wall W sections were cut up (not bent, but cut), and there were no stacks of floors as predicted by the NIST account of events, with the upper floors falling as a single unit. The concrete floors were pulverized and the debris pile looked exactly like that of a controlled demolition, and definitely not a collapse of a single block of upper floors. And to fall vertically as a single unit, the underlying perimeter supports would all have to fail at the same time. But the NIST analysis indicates the bucking of the walls on the south westerly side first, followed later by failure on the north and easterly sides.

The evidence simply does not match the conclusion presented in the global collapse analysis presented, and is, therefore, fatally flawed.

**Suggestion for Revision:** Delete “thermal expansion leading to global collapse” as your leading hypothesis. It is fatally flawed. Re-focus on the blast scenario which addresses all known evidence.

---

Comment 14:
Document: NCSTAR 1-9 WTC 13.3(16)
Page Number: 606
Paragraph/Sentence: “The minimum explosive charge (lower bound) required to fail a critical column (i.e. Column 79) would have produced a pressure wave that would have broken windows on the north and east faces of the building near Column 79.”

AND
Paragraph/Sentence: “Nearly all the windows on the northeast section of the blast floor would have been broken, even by the smaller charge. Simulations for open landscaped floors led to more extensive window breakage.”

The actual window breakage pattern on the visible floors on September 11, 2001 (NIST NCSTAR 1-9 Chapter 5) was not at all like that expected from a blast that was even 20 percent of that needed to damage a critical column in WTC 7. The visual evidence did not show showing such a breakage pattern on any floor of WTC 7 as late as about 4:00 p.m. or above the 25th floor at the time of the building collapse initiation. Views of the northeast corner at the time of the collapse were obstructed by other building.”

Comment: I believe the inference from NIST can be summarized as follows: Since the windows would have been broken with a blast event, and we didn’t notice any broken windows, we conclude that there was no blast event. This logic is flawed for many reasons:

1. The entire window analysis in NIST NCSTAR 1-9 Chapter 5 are primarily from photographic evidence many hours before collapse at about 5:21 P.M. And from the above quote, that last photographic evidence was around 4:00 p.m., or over an hour and twenty minutes before collapse. So, the fact that “visual evidence did not show . . . breakage pattern on any floor of WTC 7 as late as 4:00 p.m. . . .” is meaningless, since the final blast events would not have been initiated until about 5:20 p.m. And by saying . . . or above the 25th floor at the time of building collapse . . . ” can be inferred that below the 25th floor up to collapse initiation there WAS evidence of window breakage.

2. “Views of the northeast corner at the time of collapse were obstructed by other buildings.” In other words, since the northeast corner - the area predicted by NIST simulations to have been broken (indicated on Page 23 - NCSTAR 1A), could not even be seen because they were obstructed.

3. The conclusion that windows must break by the blast event for it to be a controlled demolition is simply false and not supported by many videos of structures that have been taken down by a controlled demolition; indicating that the blast event did not break windows, but rather the subsequent collapse did.

4. The assumption that a certain amount of an explosive shaped charge to sever the heavy boxed in Column 79 assumes that all cutting action is only from the shaped charge. However, if the column was initially weakened by an incendiary such as thermite, the size of the shaped charge necessary to sever the weakened column would be significantly less, indicating that the glass breakage and sound volume would be far less.
**Reason for Comment:** Window breakage is a very poor method to conclude that explosives were not used, especially since there is overwhelming evidence that explosives were used to bring the building down.

By NIST's own admission, there is not sufficient evidence to support this rationale whatsoever.

**Suggestion for Revision:** "Unfortunately the visual evidence did not show showing such a breakage pattern on any floor of WTC 7 as late as about 4:00 p.m. (which was well over an hour before the building collapsed), or above the 25th floor at the time of the building collapse initiation. Views of the northeast corner at the time of the collapse were obstructed by other buildings. Accordingly, we cannot rule out a blast scenario based on available window data, since we do not have data at the time a blast would have occurred, or within seconds of the collapse at about 5:20 P.M."

---

**Comment 15:**

**Report Number:** NCSTAR 1A

**Page Number:** 23

**Paragraph/Sentence:** "The calculations showed that all the hypothetical blast scenarios and charge sizes would have broadcast significant sound levels from all of the building faces." AND "...the sound level... would have been approximately 130 dB to 140 dB at a distance of 1 km..." AND (Page 24 NCSTAR 1A): "However, the soundtracks from videos being recorded at the time of the collapse did not contain any sound as intense as would have accompanied such a blast event. Therefore, the Investigation Team concluded that there was no demolition-type blast that would have been enough to lead to the collapse of WTC 7..."

**Comment:** I believe the NIST position can be summarized as follows: Since our model predicted explosion sounds in excess to what we have known recordings of the event, we conclude that explosives were not used. This logic is flawed for many reasons:

1. If the heavy columns were weakened with an incendiary first, smaller shaped charges with less sound would be needed.

2. Soundtracks of videos do indicate a rather loud collapse, however, the placement of the video microphones are haphazard, and not necessarily focused on the source of the sound propagation. Just like any sound heard is dependent on how your head is turned, one simply cannot rely on video sound tracks as firm evidence of sound propagation or intensity.

3. There are many controlled demolitions very similar to the WTC 7 collapse that has very similar sound volumes. One recent one is in Glasgow and can be heard and viewed at:

   http://news.bbc.co.uk/2/hi/uk_news/scotland/glasgow_and_west/7516267.stm
4. There are many examples of explosions. Please review all the evidence at the following link: http://www.youtube.com/watch?v=ylgoXQW/SIM

5. There are many eyewitness accounts of explosions. Please refer to Comments 6 and 10 for examples.

**Reason for Comment:** To conclude that explosives were not used based only on sound is not realistic, in light of all the other evidence that the use of explosives were used to take the building down, that has not been addressed in this report.

All the known evidence of explosions need to be addressed in order to be valid. Relying on video sound tracks and a simulation model is simply not appropriate or sufficient to dismiss the use of explosives in light of the overwhelming unaddressed evidence for the use of explosives.

**Suggestion for Revision:** "However, the soundtracks from videos being recorded at the time of the collapse did not contain any sound as intense as would have accompanied such a blast event. NIST recognizes that video sound tracks are not accurate enough to dismiss the use of explosives, and given all the other evidence (time of fall, symmetry of fall, eyewitness accounts, cut up wall segments contained debris field, evidence of thermite, evidence of molten metal, pyroclastic flow of dust, etc), NIST recognizes that dismissing the blast hypothesis based on only one method (model predicted sound levels) is inappropriate, and not accordance with the scientific method.

---

**Comment 16:**
**Report Number:** NCSTAR 1A
**Page Number:** 22
**Paragraph/Sentence:** Section 3.3 Paragraph 4: "The other scenarios would have required more explosives or were considered infeasible to carry out without detection."

**Comment:** To dismiss a very high probability of global collapse due to explosives, which easily explains all known evidence and eyewitness accounts because NIST examiners didn't "think" that planting of explosives could be carried out without detection, is totally unscientific. Rather, it's very plausible that explosives could have been planted since many of the floors were controlled by governmental entities and much of the prep work could have been placed on the core columns accessed undetected inside the elevators shafts, similar to the twin towers. Moreover night work and the fact that the owner of the structure gained financially by the collapses that day would point to access issues not being problematic at all.

**Reason for Comment:** To dismiss placement of explosives because those placing it "might be detected" is not a good scientific reason to dismiss the likelihood and only increases the potential ridicule of the official investigation.
Suggestion for Revision: "The other scenarios would have required more explosives, which is entirely within the realm of possibility. Moreover, NIST bases the conclusions solely on scientific evidence and research, and leaves how the potential explosives could have been placed to other agencies having jurisdiction."

Comment 17:
Report Number: NCSTAR 1A
Page Number: xxxi Executive Summary
Paragraph/Sentence: “This was the first known instance of the total collapse of a tall building due to fires.”

Comment: This very conclusion, regardless of how extensive the modeling simulations were, is cause for deep concern and is highly suspect. Since there have been thousands of fires, several of which were discussed in the "Lessons Learned" Chapter (NCSTAR 1-9 Chapter 8.5 pages 331 – 336), that burned hotter and longer and never globally collapsed; it is very improbable that this is the first and only structure to-date that experienced global collapse in all of world history.

Reason for Comment: A far more likely rationale is that the structure was taken down by a controlled demolition. It has all the attributes of a controlled demolition, and the evidence collected all point to a controlled demolition. And almost anyone who watches the collapse and compares it to other controlled demolitions concludes the same thing. However, NIST ignored all the evidence and dismissed this cause on very questionable model results and video noise levels; the determination that in NISTS opinion, anyone planting explosives would have been detected, and a flawed window analysis.

Suggestion for Revision: “Since no structure has ever experienced a global collapse due to a simple office fire, before or after 9/11, any conclusion that suggests “thermal expansion” as the cause of the collapse of WTC 7 would be remarkable and highly suspect. Accordingly, the finding of NIST does not support the following explanations for the global collapse: diesel fire, damage due to impact from WTC 1, column heating beyond its strength carrying capability, “thermal expansion” of beams breaking their connections, or global collapse due to the relatively cool and short duration of office fires. Rather, the only explanation for the global collapse that matches all known evidence is that WTC 7 collapse is due to a controlled demolition. Who placed the explosives and when they were placed, is outside the jurisdiction of this agency, and scope of this report.

Comment 18:
Report Number: NCSTAR 1-9 Chapter 11
Page Number: 534 and 535
Paragraph/Sentence: The entire summary of findings, including bolt failures, weld failures, beams buckling, girders “walking off” beam seats, sheer studs breaking, at relatively low temperatures ultimately leading to loss of lateral support of Column 79; and then to a global collapse needs to be confirmed by something besides a computer “simulation.”

Comment: Not having the computer inputs, the models or the necessary time to evaluate, due to the deadline for public input, there was no way to verify the simulations that NIST performed. Therefore, one must rely on logical deductions as to the validity and probability of the results.

The entire analysis of the global collapse in Chapter 12 is based upon the collapse initiation simulation of Chapter 11, which is based on the assumptions of temperatures models in prior chapters, which is based on the fuel loading of a prior chapter, and based on fire initiation of an even prior chapter. Each module is dependent on the results of a prior simulation. Yet, all of it is just a computer simulation that has not been verified in a laboratory and the end results are so fantastic as to be totally unbelievable. Never in all history has a building collapsed this way, and there have been hundreds of if not thousands of fires in steel framed structures with hotter temperatures and with no global collapse at almost free fall speed.

Reason for Comment: Having worked with many computer simulation models, the output results can be very sensitive to the input assumptions, and those results can be dramatically different based on the input. Results from model simulations, for example, the weather service predicting “projected” hurricane paths can be very questionable. In this particular case, any errors or wrong assumptions are compounded because each subsequent simulation is dependent on the cumulative assumptions and results from prior simulations. Recognizing this reliance of assumptions and the multiplying effect of incorrect assumptions, resulting in a conclusion that has never happened in the real world, places the entire modeling simulations into the realm of the unbelievable without corroborating evidence. The results from the NIST simulation would be like NOAA predicting an Atlantic hurricane travelling from the Caribbean to Africa, spinning clockwise, opposite to all historical precedence.

Suggestion for Revision: “Because the simulation results are so astonishing, only thermal expansion leading to global collapse based only on computer simulations simply cannot be believed unless it is confirmed with actual historical examples of structures that acted in a similar way.”

Comment 19:
Report Number: NCSTAR 1A
Page Number: 41
Paragraph/Sentence: Second Paragraph, First Sentence: “The elevation of the top of the parapet wall was +925 ft. 4 in.,”
Comment: This elevation needs to be clarified. Was this NGVD or AGL? In other words, is the top of the parapet wall 925 feet above mean sea level or above the ground level?

Reason for Comment: The datum should be clarified because according to Page 5 NCSTAR 1A, the height of the building was 610 feet tall.

Suggestion for Revision: “The elevation of the parapet wall was [+925feet 4 inches above the ground] OR [+925.33' NGVD].”

---

Comment 20:
Report Number: NCSTAR 1A
Page Number: 38
Paragraph/Sentence: “Figure 3-14 Buckling of the lower exterior columns within 1 s of Figure 3-13.”

Comment: This graphics indicates the buckling anticipated from the NIST model simulation on the westerly side of WTC 7, and a predicted twist on the easterly side. The top of the graphic is truncated horizontally, almost inferring that it is the roof top. Recognizing that this is a section cut through at a lower level, a continuation of the graphic up to the parapet walls on the roof would indicate that the roof could not be parallel to the horizon because of the predicted buckling and twisting action. This can be seen viewing the yellow horizontal (yet uneven) floor lines of Figure 3-14.

Reason for Comment: Since we know the roof of the actual collapse event did remain virtually horizontal or parallel with the horizon and the graphic on Figure 3-14 would indicate a roof line that is NOT parallel with the horizon; the predicted global collapse from the model is false, and the model must be discarded. In addition, the graphic indicates that the sides of the structure would be twisted and not vertical. Yet, we know that the sides fundamentally remained vertical. According to NIST NCSTAR 1-9 Page 277: “Thus, well into the building collapse, the northeast corner of the building fell either straight down; directly toward, or directly away from the video camera.”

AND

Near the end of the next paragraph, same page: “The northwest edge initially tilted in a similar manner, but then settled back to its original line and fell nearly vertically, (or directly toward or away from the camera).” Other videos from differing perspectives indicate the same thing, eliminating the “directly toward or away” from the camera comment. The building fell straight down, and to fall straight down without the roof line tilting, all 58 perimeter 14” W shape columns had to be cut at the same time.
Suggestion for Revision: Show the entire structure all the way to the top to indicate the roof and wall lines of position that the NIST model predicts just before collapse and it will indicate how the simulation simply does not follow the observed collapse geometry.

Comment 21:
Report Number: NCSTAR 1A
Page Number: 40
Paragraph/Sentence: 3.6 Last paragraph, about halfway through it: “Assuming that the descent speed was approximately constant, the two quantities needed for the determinations were (1) a length of some feature of the building descended and (2) the time it took to fall that distance.”

Comment: The first phrase of the sentence “Assuming that the descent speed was approximately constant…” is a poor assumption. The speed of a falling body is not constant. It’s accelerating at a rate of 9.8 m/s (squared). The rate of acceleration is constant…not the speed.

Reason for Comment: The assumption by NIST is incorrect, or rather defies all known Newtonian physical laws of free falling bodies.

Suggestion for Revision: “Assuming that the descent speed was accelerating at the rate of gravitational attraction . . .”

Comment 22:
Report Number: NCSTAR 1A
Page Number: 40
Paragraph/Sentence: 3.6 Last Paragraph, first sentence: “NIST was interested in estimating how closely the time for WTC 7 took to fall compared with the descent time if the building were falling freely under the force of gravity (NOIST NCSTAR 1-9 Chapter 12).

Comment: The time that the structure fell may not have been precisely at free fall speed in a vacuum, but was certainly close to free fall speed which is remarkable given the fact that it was supported by 24 core and 58 perimeter columns. Saying that the actual rate of fall for the selected feature was 1.5 seconds longer (5.4 seconds vs. a fall in a vacuum of 3.9 seconds), or “40 percent longer”, is misleading and not significant. Regardless, all 58 exterior supporting columns had to be severed at virtually the exact same time in several places at various levels, in order for the roof to fall parallel to the horizon at almost free fall speed.
Reason for Comment: What would be far more significant is to compare the actual time of collapse vs. the NIST simulation that was done, including the time delay for the natural inertial effects of impact and acceleration of each internal floor. In addition the time to buckle the interior and exterior southwest columns and the twist of the faces predicted by the NIST model graphically indicated on Page 38 needs to be calculated.

If all the inertial effects are summed, the time for each floor to cascade and the time to bend and buckle all the columns as predicted in the NIST model was determined vs. the actual the time to fall, it would be far more beneficial to determine if the NIST simulation is even valid. If the model time does is not corroborated by the actual time, then the model is fatally flawed.

Suggestion for Revision: “NIST compared the time predicted in the model that accounted for all buckling time and the inertial effects of accelerating each floor and compared it to the measured time of the event.” (Then expand on the results.) The “40% greater” comment is of little value.

Comment 23:
Report Number: NCSTAR 1A
Page Number: 58 through 66
Paragraph/Sentence: All the recommendation for stricter design codes including recommendations such as (Page 55-4.6) "Structural systems expressly designed to prevent progressive collapse. The current model building codes do not require that buildings be designed to resists progressive collapse."

Comment: A global collapse has never happened with any steel structures in the way that WTC 7 fell, unless it was a controlled demolition. Like tornadoes, designing for the loadings imposed by a controlled demolition is simply out of the question due to cost. The conclusion of NIST that this building fell due to thermal expansion does not fit the evidence, and even if it somehow did (which defies all probability and does not pass the straight face test); if it only has happened once in the last 100 years, and never since that day, then a recommendation of an overhaul in fire and structural design codes is irresponsible. At a minimum, a cost/benefit study should be conducted prior to making such recommendations based on a singular event in the last 100 years.

Reason for Comment: The reason that engineers and codes do not require thermal expansion analysis of structures globally failing due to fires, is because it never happens, and any small thermal expansion that does happen is negligible or local relative to the entire structure. NCSTAR 1A Executive Summary Page xxxi states: "This was the first known instance of the total collapse of a tall building primarily due to fire."
NCSTAR 1A Section 4.5.2 states: “The structural design did not explicitly evaluate fire effects, which was typical for engineering practice at that time and continues to remain so today.”

NCSTAR 1A Page 44 states: “This is the first known instance where fire-induced local damage (i.e. buckling failure of Column 79; one of 82 columns in WTC 7) led to the collapse of an entire tall building.”;

AND

NCSTAR 1A Section 5.1 Page 57 states: “The partial or total collapse of a building due to fires is an infrequent event.” By the many admissions of NCSTAR 1A, it is such a highly improbable event (in fact NEVER has a steel structure collapsed globally due to thermal expansion) as to render the entire NIST simulation process, its conclusions and the recommendations for even more stringent codes based on a flawed analysis of a singular event, totally unacceptable.

Suggestion for Revision: “Since the global collapse of a steel structure never occurred before or after the collapse of WTC 7, without the use of explosives, code changes based on one single event is not prudent, and no code changes whatsoever are recommended.”

---

Comment 24:
Report Number: NCSTAR 1A
Page Number: Cover Page of Report
Paragraph/Sentence: N/A

Comment: This report and analysis has far reaching implications, since it is a structural analysis with associated conclusions and recommendations. Accordingly due to its importance, Professional Engineer(s) in responsible charge should sign, date and seal all documents in accordance with ASCE and State Statutes. As such, that engineer is responsible for its content, and any falsification of content would be subject to disciplinary action if it was found that facts were intentionally overlooked, or conclusions intentionally skewed, in accordance with the Code of Ethics for Engineers.

Reason for Comment: All engineering documents, studies and analysis should be signed and sealed by the professional engineer(s) in responsible charge, to lend credibility to the entire report.
Comment 25:
Report Number: NCSTAR 1A
Page Number: Page xxxi of the Executive Summary
Paragraph/Sentence: Paragraph 3 states: “However, the reader should keep in mind that the building and the records kept within it were destroyed, and the remains of all the WTC buildings were disposed of before congressional action and funding was available for this Investigation to begin.”

Comment: Due to the problem of having key evidence destroyed, which puts a real burden on the analysis team at NIST, and realizing that the computer models could not be verified by field evidence, places the entire modeling process, calibration and conclusions of that model into serious question.

Reason for Comment: To protect NIST staff, you may wish to put a bold disclaimer on the cover of the entire report. As mentioned several times (NCSTAR 1A Page 38): “Independent assessment of the validity of the key steps in the collapse of WTC 7 was a challenging task.”

Suggestion for Revision: “KEY EVIDENCE RELATING TO THE COLLAPSE OF WTC 7 WAS IMMEDIATELY AND SYSTEMATICALLY DESTROYED BEFORE THE INVESTIGATION INTO THE CAUSE OF THE COLLAPSE COMMENCED. THE NIST COLLAPSE SCENARIO HEREIN IS BASED IN PART ON A COMPUTER MODEL UTILIZING NUMEROUS ASSUMPTIONS THAT COULD NOT BE FIELD VERIFIED. INPUTS, EQUATIONS AND ASSUMPTIONS USED IN THE COMPUTER SIMULATIONS AND THE TECHNICAL ANALYSIS HAVE NOT BEEN PEER REVIEWED. NIST RESERVES THE RIGHT TO MODIFY THE CONCLUSIONS OF THIS REPORT IF ADDITIONAL INFORMATION AND EVIDENCE IS FOUND WHICH MAY DRAMATICALLY ALTER THE RECOMMENDATIONS.”