Chief, Management and Organization Division
National Institute of Standards and Technology
100 Bureau Drive, Mail Stop 3220
Gaithersburg, MD 20899-3220

Dear Sir or Madam:

This petition is a request for correction of information disseminated by the National Institute of Standards and Technology ("NIST"). This Request for Correction (the "Request") is being submitted by Bob McIlvaine, Bill Doyle, Dr. Steven Jones, Kevin Ryan, Richard Gage, AIA Architect, and Scholars for 9/11 Truth and Justice (referred to herein collectively as the "Requesters") under Section 515 of Public Law 106-554, the Data Quality Act (the "DQA"), the Office of Management and Budget's ("OMB's") government-wide Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies (the "OMB Guidelines"), and NIST's "Guidelines, Information Quality Standards, and Administrative Mechanism" (the "NIST IQS"). This Request is being submitted as a single document signed by multiple Requesters in order to avoid submitting duplicative Requests. However, each Requester preserves the right to appeal the outcome of NIST's determination of the merits of this Request either jointly or severally, in each Requester's sole discretion.

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Requesters prefer to be contacted via email whenever possible. Requesters also request that NIST not distribute the Requesters' contact information listed above to anyone not officially involved in addressing this Request. If this Request is published on NIST's website or elsewhere, a redacted version should be published omitting Requesters' contact information.

The information that is the subject of this Request is NIST's Final Report on the Collapse of the World Trade Center Towers, including its various supporting reports and appendices thereto, all of which begin with "NIST NCSTAR" (collectively referred to herein as the "WTC Report"). The WTC Report can be found at the following NIST website: http://wtc.nist.gov/reports_october05.htm (last visited January 19, 2007). NIST should be commended for the amount of time and effort put into the WTC Report. However, the WTC Report contains information that clearly violates the DQA, the OMB Guidelines and the NIST IQS, and such violations seriously affect Requesters, as described more fully below.

I. The WTC Report Contains Information Under the NIST IQS

The NIST IQS defines information as follows:

> **Information** means any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms. This definition includes information that an agency disseminates from a Web page, but does not include the provision of hyperlinks to information that others disseminate. This definition does not include opinions, where the agency's presentation makes it clear that what is being offered is someone's opinion rather than fact or the agency's views.

(*See* NIST IQS, Part I, Definitions.) Clearly the WTC Report falls under the definition of information because it is a communication of facts or data in a medium. Specifically, the stated goal of the WTC Report was to give facts regarding "the building construction, the materials used, and the technical conditions that contributed to the outcome of the WTC disaster." (*See* WTC Report, NIST NCSTAR 1, p. xxix.) Furthermore, nowhere within the WTC Report does NIST "make it clear that what is being offered is someone's opinion rather than fact or the agency's views."

In fact, NIST, through the National Construction Safety Team Act (Pub. Law 107-231) (the "NCST Act") is required by law to generate such information. *See* 15 U.S.C. § 7301 *et seq.* Additionally, NIST states that, although it consulted an outside advisory committee, the content and recommendations of the WTC Report are "solely the responsibility of NIST" (*See* WTC Report, NIST NCSTAR 1, p. xxxii.) Thus, it is clear that the WTC Report is "information" that is covered by the DQA and the NIST IQS.

II. The WTC Report was Disseminated by NIST

The NIST IQS defines dissemination as follows:

> **Dissemination** means agency initiated or sponsored distribution of information to the public. Dissemination does not include distribution limited to government employees or agency contractors or grantees; intra- or inter-agency use or sharing of government information; and responses to requests for agency records under the Freedom of Information Act, the Privacy Act, the Federal Advisory Committee Act or other similar law. This definition also does not include distribution limited to correspondence with individuals or persons, press releases, archival records, public filings, subpoenas or adjudicative processes.

(*See* NIST IQS, Part I, Definitions.) Here again, the WTC Report was clearly disseminated by NIST. Specifically, NIST was required by law to generate the WTC Report under the NCST Act, and did in fact generate the WTC Report in September 2005. *See* 15 U.S.C. § 7307 (mandating the issuance of a final public report following the investigation); *cf.* 15 U.S.C. § 7301 (c)(1)(H) (providing for "regular briefings of the public on the status of the investigative proceedings and findings"). The WTC Report was disseminated by NIST via the following website: http://wtc.nist.gov. Thus, the WTC Report was clearly disseminated by NIST and is subject to administrative and judicial review under the DQA and the NIST IQS.

III. Correction of the WTC Report Would Serve a Useful Purpose

Under the NIST IQS, no initial request for correction will be considered concerning "disseminated information the correction of which would serve no useful purpose." (*See* NIST IQS, Part III(B)(3).) This exception clearly does not apply to this Request. The horrendous attacks on the World Trade Center on 9/11 were the worst

attacks on American soil since Pearl Harbor, and perhaps the worst such attacks in the history of the United States. Approximately 3,000 people died on 9/11, and the vast majority of those died in the World Trade Center. In fact, family members of two of the Requesters herein died in the WTC Towers. Accurate, reliable information regarding the 9/11 attacks is imperative to the future of the United States because it is an essential part of any rational planning process and policy aimed at ensuring that such an attack never happens again.

NIST was statutorily tasked with telling the American people, the 9/11 victims' family members, independent researchers, and the U.S. government how and why the WTC Towers collapsed, which would form the basis for future government policy. If NIST, through the WTC Report, has given inaccurate, unreliable information about the destruction of the WTC Towers, the implications would stretch across the entire architectural, political and social landscape.

Initially, inaccurate information and/or incorrect analysis by NIST would lead to improper building codes, standards and practices. These improper building standards could, in turn, lead to needless deaths if such standards are too lenient, or unnecessary expenses if the standards are too strict.

In addition, there are immense political and social ramifications that stem from NIST's inaccurate information and analysis. For example, if the destruction of the WTC Towers was caused solely by the actions of foreign terrorists, but the quality of the data and information disseminated by NIST fails to meet the basic requirements of the DQA, then millions of Americans will needlessly doubt their government. Consequently, Americans' trust in their government will unnecessarily be undermined.

On the other hand, if NIST is incorrect and airplane damage and resultant fire alone cannot explain the destruction of the WTC Towers, it would mean that the assumption that foreign terrorists alone carried out the destruction would become a matter of dispute. The importance of resolving this question is undeniable given that the destruction of the buildings, and the resulting deaths of almost 3,000 American citizens influenced, and continues to influence, national decisions of the gravest magnitude.

Thus, the importance and usefulness of having accurate, reliable, objective data regarding the destruction of the WTC Towers cannot be overstated, and, in either case, an important and highly useful purpose will be served by NIST disseminating information that complies with applicable information quality standards.

IV. APPLICABLE INFORMATION QUALITY STANDARDS SUMMARY

A. Information Quality Standards Background for All Information

Under the OMB Guidelines and the NIST IQS, information quality comprises three elements: utility, integrity, and objectivity. (*See* NIST IQS, Part II.) This Request will address several distinct items of information contained within the WTC Report. For

each item of information so addressed, this Request will describe in detail how such information fails to comply with at least one of these three elements of information quality. Consequently, the standards for each of the three information quality elements are summarized for the reader's convenience below.

"Utility" under the NIST IQS means that the information is "useful to its intended users". (*See id.*) The term "useful", in turn, means that the information is "helpful, beneficial, or serviceable to its intended users." (*See id.*)

"Integrity" under the NIST IQS means that before information is disseminated by NIST, it is "safeguarded from improper access, modification, or destruction." (*See id.*) Furthermore, the integrity of information is protected "to a degree commensurate with the risk and magnitude of harm that could result from the loss, misuse, or unauthorized access to or modification of such information." (*See id.*)

"Objectivity" under the NIST IQS means that the information is "accurate, reliable, and unbiased." (*See id.*) Moreover, "objective" information is "presented in an accurate, clear, complete, and unbiased manner." In the case of scientific information, "the original and supporting data are generated, and the analytic results are developed, using sound statistical and research methods." (*See id.*)

Under the OMB Guidelines, objectivity involves two distinct elements: presentation and substance. *See* 67 F.R. 8452. For proper presentation "in disseminating certain types of information to the public, other information must also be disseminated in order to ensure an accurate, clear, complete, and unbiased presentation." *See id.* Furthermore, "in a scientific … context, the supporting data and models [should be disseminated], so that the public can assess for itself whether there may be some reason to question the objectivity of the sources. Where appropriate, data should have full, accurate, transparent documentation, and error sources affecting data quality should be identified and disclosed to users." *See id.* If scientific "data and analytic results have been subjected to formal, independent, external peer review, the information may generally be presumed to be of acceptable objectivity. However, this presumption is rebuttable based on a persuasive showing by the petitioner in a particular instance." *See id.*

B. Information Quality Standards Background for Influential Information

The OMB Guidelines and NIST IQS apply stricter quality standards to the dissemination of information that is considered "influential". *See* 67 F.R. 8455; NIST IQS, Part II. The OMB Guidelines define "influential" information as information that "will have or does have a clear and substantial impact on important public policies or important private sector decisions." *See id.* The NIST IQS similarly define "influential". *See* NIST IQS, Part II.

With regards to influential scientific information and analytic results related thereto, the OMB Guidelines "generally require sufficient transparency about data and

methods that an independent reanalysis could be undertaken by a qualified member of the public." *See* 67 F.R. 8460. The transparency requirements "apply to agency analysis of data from a single study as well as to analyses that combine information from multiple studies." *See id.* In its definition of transparency, the NIST IQS cites to the OMB Guidelines. *See* NIST IQS, Part I, Definitions.

C. The WTC Report is "Influential" Scientific Information

As stated previously, the WTC Report was mandated by the NCST Act. *See* 15 U.S.C. § 7307. However, the NCST Act mandate went even further than simply requiring the dissemination of a final report on NIST's findings. The NCST Act also required the NIST to "recommend, as necessary, specific improvements to building standards, codes and practices," and recommend "actions needed to improve the structural safety of buildings, and improve evacuation and emergency response procedures." *See* 15 U.S.C. § 7301(a)(2)(C), (D).

The collapses of the Twin Towers were unprecedented events in history. Never has a steel-framed high rise structure collapsed due to fire, or due to fire and damage. Thus, these collapses are the only examples of a building collapse that are capable of being examined and having an influence on building codes and standards under the NCST Act. In fact, the NCST Act was enacted after September 11, 2001 precisely for this reason.

It is clear that the WTC Report has a "clear and substantial impact on important public policies" because it will impact "building standards, codes and practices." It is also clear that the WTC Report has a clear and substantial impact on important private sector decisions because it will impact the structural safety of buildings and evacuation and emergency response procedures, as well as the costs builders incur in constructing steel-framed high rise structures. For both of these reasons, the WTC Report clearly qualifies as "influential" scientific information under the OMB Guidelines and the NIST IQS, regardless of whether NIST itself considers the information it disseminates influential.

V. INFORMATION IN THE WTC REPORT VIOLATES OMB AND NIST INFORMATION QUALITY STANDARDS

A. Rejection of the Less Severe Damage Estimates

1. Information Regarding the Rejection of the Less Severe Damage Estimates from the NIST Computer Simulations Violates the OMB Guidelines and NIST IQS

The WTC Report admits that the "global impact analyses were the primary method by which the damage to the towers was estimated. The global analyses included, for each tower, a 'base case' based on a best estimate of all input parameters. They also provided more and less severe damage estimates based on variations of the most

influential parameters. These more and less severe damage scenarios provided a range of damage estimates for the towers due to aircraft impact." (NCSTAR 1-2B, p. 385).

All three levels of assumed damage severity that NIST modeled in the WTC Report, including the less severe cases, matched the observed data reasonably well. The following are excerpts of the WTC Report, NCSTAR 1-2B:

> "The magnitude and mode of impact damage on the exterior wall were still in good agreement with the observed damage for this less severe impact scenario." (p.276) (describing WTC 1)
>
> "The mode and magnitude of the calculated and observed impact damage on the exterior wall are still in good agreement in this less severe impact analysis." (p.312) (describing WTC 2)

Although the less severe impact scenarios were "in good agreement with observed damage", the WTC Report later states that the "less severe case was not used in subsequent fire dynamics, thermal, and structural analyses as it did not reasonably match key observables." (NCSTAR 1-6, p. 121).

By way of explanation, the WTC Report claims that the less severe case "did not meet two key observables: (1) no aircraft debris was calculated to exit the side opposite to impact and most of the debris was stopped prior to reaching that side, in contradiction to what was observed in photographs and videos of the impact event (see Section 7.10), and (2) the fire-structural and collapse initiation analyses of the damaged towers (NIST NCSTAR 1-6) indicated that the towers would not have collapsed had the less severe damage results been used." (NCSTAR 1-2, p.167) However, neither "key observable" is a scientifically valid reason for excluding the less severe case, as will be demonstrated in detail below.

The first "key observable" that the less severe case did not match is that "no aircraft debris was calculated to exit the side opposite to impact and most debris was stopped prior to reaching that side." Of the several pages that discuss the computer simulated damages caused by the less severe cases, the only sentence that addresses the issue of exiting debris says this (referring to WTC 1): "Little or no debris penetration of the south wall of the tower was expected for the less severe impact condition." (NCSTAR 1-2B, p.285) Additionally, in section 9.11, "COMPARISON WITH OBSERVABLES", the WTC Report states: "In the less severe damage analysis, as shown in Figure 9-120, none of the aircraft debris that passed through the core was calculated to exit the building." (NCSTAR 1-2B, p.340). Thus, it would initially appear that the first "key observable" was indeed absent from the less severe damage analysis.

However, elsewhere in the WTC Report, the reader finds that **neither the base case nor the more severe case matched this "key observable" in either tower**. For WTC 1, the WTC Report states: "No portion of the landing gear was observed to exit the tower in the simulations, but rather was stopped inside, or just outside, of the core."

(NCSTAR 1-2B, p.345) This statement stands in stark contrast to the WTC Report's admission that landing gear was observed exiting the south side of WTC 1 at about 105 mph. (NCSTAR 1-2B, p.344) Therefore, if none of the simulations showed landing gear exiting WTC1, the justification for excluding the less severe case (ie. that the first "key observable" was not present) is clearly false with regards to WTC 1. Moreover, for WTC 2, the WTC Report states:

> "No landing gear debris exited the building in either the base case or the less severe simulations." (NCSTAR 1-2B, p.353)
>
> "In all three simulations…it was estimated that the building contents would likely stop the engine fragments prior to impacting the northeast corner of the exterior wall." (NCSTAR 1-2B, p.353)
>
> "None of the three WTC 2 global impact simulations resulted in a large engine fragment exiting the tower." (NCSTAR 1-2B, p.353)

Again, because a landing gear and an entire engine did, in fact, exit WTC 2 in real life, there was absolutely no basis for selecting the base and more severe cases while eliminating the less severe cases based on the first "key observable." In fact, all of the impact scenarios should have been disqualified based on the WTC Report's own standard. In sum, based on the first "key observable," NIST should have either (1) disqualified all impact scenarios or (2) disqualified none of them (thereby including the less severe case).

The second "key observable" that the less severe case did not match was that "the towers would not have collapsed had the less severe damage results been used." This justification for excluding the less severe case is invalid because it is based on false logic (namely, begging the question) and is a classic example of faulty scientific analysis. The main goal of NIST's investigation and analysis was to determine the cause of the collapse of the Twin Towers. This means that NIST is not logically or scientifically permitted to assume that the cause of the collapses was airplane damage plus fire, and only choose computer models to fit that assumption. If the Towers did not collapse solely due to impact damage plus the resulting fires in NIST's computer simulations, then the impact of the airplanes and the resulting fires were not the sole cause of the buildings' collapses. It is not scientific to selectively choose only those computer simulations that result in a preordained conclusion. To do so is to invite the accusation of political expediency.

Indeed, the illogic used by NIST in the WTC Report can be illustrated by the following hypothetical: Two governmental scientific advisory panels are tasked with determining the cause of global warming. Assume for purposes of this illustration that global warming is caused by an equal mixture of man-made causes and natural causes.

<u>First Panel - Biased Towards Finding Natural Global Warming:</u> In this first case, assume that the panel discards the computer models that include only minor warming from natural causes, and uses in its report only those models that show large natural

warming factors. It would be quite clear that this first panel's "scientific" analysis is, in reality, unscientific and actionable under the DQA because the panel is discounting the contributions of man-made causes and biased towards a finding that global warming is only a naturally occurring process.

Second Panel – Biased Towards Finding Man-Made Global Warming: In this second case, assume the panel discards the computer models that include only minor man-made warming, and uses in its report only those models that show large man-made warming factors. It would be equally clear that this second panel's "scientific" analysis is actually unscientific and actionable under the DQA because the panel is again biased towards a preordained finding, namely that man-made causes are the only causes of global warming.

This hypothetical example is only meant to illustrate how computer models can be manipulated and selectively chosen in order to fit a preordained conclusion.

NIST's bias in this regard is especially apparent in light of the fact that the WTC Report admits "The magnitude and mode of impact damage on the exterior wall were still in good agreement with the observed damage for this less severe impact scenario." (NCSTAR 1-2B, p.276) (describing WTC 1) And, "The mode and magnitude of the calculated and observed impact damage on the exterior wall are still in good agreement in this less severe impact analysis." (NCSTAR 1-2B, p.312) (describing WTC 2). Thus, by using flawed reasoning and false justifications for rejecting the less severe cases, NIST violated the NIST IQS and OMB Guidelines when it excluded the less severe damage case from its fire dynamics, thermal, and structural computer simulations. In fact, NIST's exclusion of the less severe damage cases was, at a bare minimum, arbitrary and capricious, and at worst appears to have been done deliberately in order to fit a preordained conclusion.

Under the NIST IQS, "objective" information is information that is "accurate, reliable, and unbiased." Because NIST has not provided any scientifically sound justification for excluding the less severe damage case from its computer simulations, any and all information that relies solely on the base case and/or the severe case is not "objective" because it is not accurate, reliable or unbiased. In fact, NIST seems to be heavily biased towards finding that aircraft impact plus the resulting fires were the sole cause the WTC Towers' collapse because NIST adopts a demonstrably false justification for excluding a damage simulation in which "the towers would not have collapsed." This is similar to the hypothetical situation discussed above where the global warming advisory panel is biased against finding that man-made warming inputs were significant in the observed global warming data by choosing computer models to fit its preordained and politically expedient conclusion.

An unbiased scientific inquiry would investigate other possible hypotheses if its computer simulations were producing results that did not match key observables, namely that "towers would not have collapsed." Requesters have overcome the peer-review presumption, if such presumption is applicable, that the data is objective because NIST's

justification for excluding the less severe damage case from its computer simulations is, without any doubt, demonstrably biased and false.

The exclusion of the less severe cases also violates the information quality standard of utility. Specifically, improperly excluding computer simulations that do not result in building collapse renders the WTC Report not useful to its intended users. It is not useful because the reader cannot determine whether airplane damage plus fire alone were the only cause of the collapses.

2. Correction Sought: Inclusion of Detailed Computer Simulations Using Less Severe Damage Estimate

The WTC Report states: "As a result, this chapter provides detailed description of the results of the analyses pertaining to the base case and the more severe case, which were used as the initial conditions for the fire dynamics simulations (NIST NCSTAR 1-5F), thermal analyses (NIST NCSTAR 1-5G), and fire-structural response and collapse initiation analyses (NIST NCSTAR 1-6). Only a brief description is provided for the less severe damage results for comparison purposes. The details of the less severe damage estimates can be found in National Institute of Standards and Technology (NIST) NCSTAR 1-2B." (NCSTAR 1-2, p.167). Therefore, **Requesters hereby request that the report on the fire dynamics simulations (NCSTAR 1-5F), thermal analyses (NCSTAR 1-5G) and fire-structural response and collapse initiation analyses (NCSTAR 1-6) all be corrected and revised to include a detailed description of the simulation results when the less severe damage case is used as the initial conditions**, which NIST has already admitted does not lead to collapse of the structure. Although the details of the less severe damage estimates can be found in NCSTAR 1-2B, the details of the behavior of the subsequent computer models cannot be found there, and they have been excluded without proper justification, in violation of the DQA, NIST IQS and OMB Guidelines. Requesters also request that the WTC Report be revised to provide a detailed analysis of how the fact that the less severe cases do not result in structural failure contributes to, or detracts from, NIST's conclusion that airplane damage plus fire was the sole cause of the collapses of the Twin Towers.

B. NIST's Computer Simulations

1. Information Regarding the NIST Computer Simulations' Accuracy and Reliability to Predict WTC Collapses Violates the OMB Guidelines and NIST IQS

Looking at NIST's Figure 9-2 in NCSTAR 1-6 (p.291), the reader of the WTC Report gets the idea that NIST ran three variants each (less severe, base, and more severe) of four computer simulations, for a total of 81 scenarios. Figure 9-2 is reproduced below:

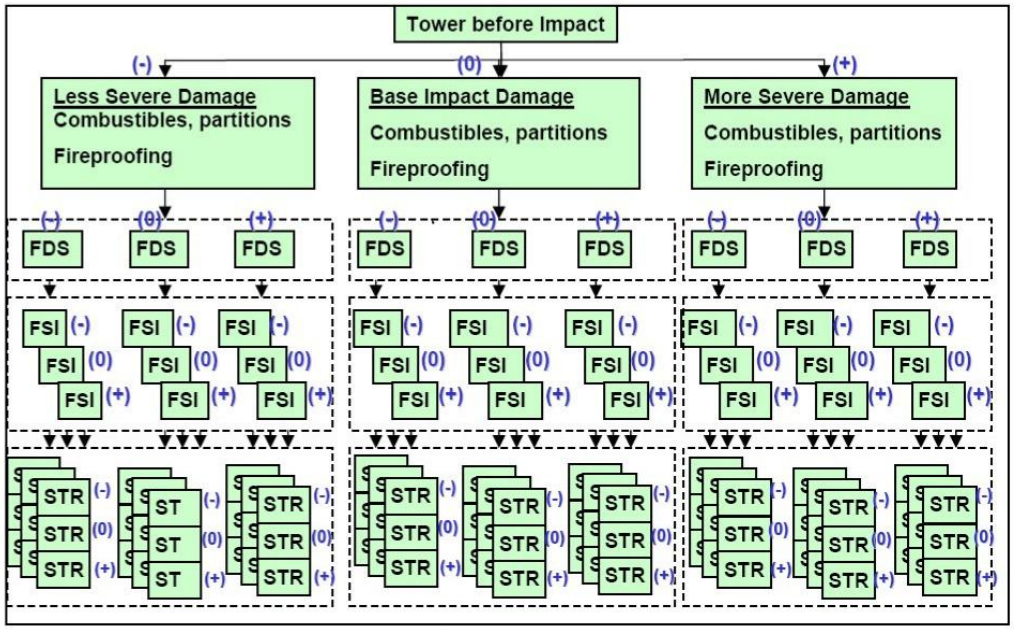

Figure 9–2. Full analysis tree for influential parameter effects.

However, the results of the vast majority of these computer simulations cannot be found anywhere in the WTC Report. For example, the second test is the Fire Dynamics Simulator (FDS). The WTC Report has this to say about why a less severe case for the FDS cannot be found: "Hundreds of preliminary calculations were performed to study the fire behavior. …After this development phase, two final multi-floor simulations included variation of the influential parameters over plausible ranges. These two simulations, denoted as Cases A and B for WTC 1 and Cases C and D for WTC 2, used initial conditions provided by the impact analysis (NIST NCSTAR 1-2)." (NCSTAR 1-5 p.103) When the WTC Report refers to "Cases A and B" and "Cases C and D," it is referring to the two base cases (A and C) and the two more severe cases (B and D). Thus, the reader is left to assume that the less severe cases got lost in the "development phase." The WTC Report makes no mention at all of a less severe case for the third test, the Fire Structure Interface (FSI).

Furthermore, we can see from Figure 9-3 of NCSTAR 1-6 (reproduced below) that even the base case has been excluded (or "pruned") from the WTC Report analysis.

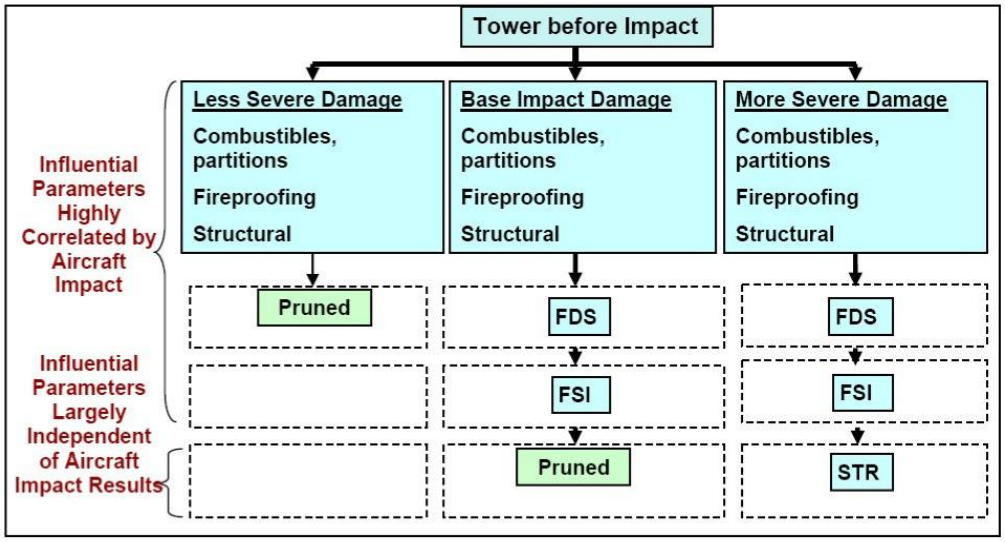

Figure 9–3. Pruned analysis tree for influential parameter effects.

The WTC Report explains why it abandoned the base case as follows: "Structural models of the two aircraft-damaged buildings indicated that, in the absence of weakening by fires or other substantial insult, the buildings would have continued to stand indefinitely (NIST NCSTAR 1-6D). The application of the fire scenarios in Cases B and D to the aircraft-damaged towers resulted in collapse." (NCSTAR 1-5, p.180) Thus, the WTC Report has excluded the base case because it would not have resulted in structural collapse. This is another example of false logic via circular reasoning, or begging the question. The main thrust of the WTC Report is to explain the cause of the collapses of the Twin Towers. If the NIST computer simulations, when run using the less severe and base cases, do not result in structural collapse, there is a high likelihood that structural damage plus the resulting fires alone did not cause the buildings to collapse. The use of false logic to exclude the less severe cases and base cases is unscientific and a clear violation of applicable information quality standards, as discussed previously.

The "pruning" of the less severe and base cases from the NIST computer simulation analysis and from the WTC Report itself clearly violates OMB's Guidelines and the NIST IQS standards of objectivity. An unbiased, accurate, reliable report would include the results of all of the computer simulations run, especially when the WTC Report already states that the less severe and base impact damage cases fit reasonably well with the observed damage. This is true because the objectivity standards for scientific information under the NIST IQS require analytic results to be developed using sound statistical and research methods. Falsely excluding computer simulations (which, again, is at least arbitrary and capricious) is not a sound statistical or research method in any scientific discipline.

More importantly, the "pruning" of the less severe and bases cases from the WTC Report analysis violates the OMB Guidelines and NIST IQS as they govern "influential scientific information" and analytic results related thereto. Recall that the OMB Guidelines require such transparency about data and methods "that an independent reanalysis could be undertaken by a qualified member of the public." *See* 67 F.R. 8460.

The transparency requirements "apply to agency analysis of data from a single study as well as to analyses that combine information from multiple studies." *See id.* By "pruning" the less severe and base cases from its detailed analysis, no member of the public can look at the data and conclude that airplane impact damage plus the resulting fires alone resulted in the building collapse. In fact, the WTC Report indicates by implication that only a small minority of its computer simulations actually resulted in building collapse. Thus, it is impossible for a qualified member of the public to read the WTC Report, undertake "an independent reanalysis," and come to the same conclusion as NIST, which is a clear violation of applicable information quality standards.

2. Correction Sought: Inclusion of the Results of All Computer Simulations Run Using Less Severe Cases, Base Cases and More Severe Cases

Requesters hereby request that the WTC Report be corrected to include the results of all of the computer simulations depicted in Figure 9-2 of NCSTAR 1-6. In other words, for all boxes in Figure 9-2 marked "STR", the WTC Report should be revised to state whether each computer simulation represented by each of those boxes resulted in building collapse. A detailed analysis is not absolutely necessary for purposes of this Request, although a relatively detailed analysis of each case is likely needed to satisfy applicable objectivity standards, especially if the majority of the computer simulations did not result in structural collapse. The bare minimum Requester expects at this point is that the WTC Report be revised to show simply **whether or not structural collapse resulted for each of the 81 "STR" computer simulations depicted in Figure 9-2 of NCSTAR 1-6**. If it turns out that a majority of the computers simulations depicted therein did not result in structural collapse, further correction of the WTC Report will be needed in order to satisfy the information quality standards that govern influential scientific information and analytic results related thereto. Specifically, NIST would be required, under applicable information quality standards, to give logical, scientific reasons why airplane damage plus the resulting fires were the sole cause of the collapse in spite of the fact that the majority of its computer simulations did not result in structural failure.

Requesters also hereby request that the WTC Report be corrected in order to give reasons for excluding the less severe and base cases for each computer simulation. NIST is hereby advised that false logic (ie. the towers would not have collapsed) is not a sufficient explanation under applicable standards of objectivity or utility for rejecting a particular computer simulation. Even a layperson understands that circular reasoning does absolutely nothing to support an explanation in any context and is certainly not useful in a scientific context. If NIST persists in rejecting the less severe cases and base cases from its detailed analysis, it must revise its report to give sound scientific reasons that do not rely on false logic or false justifications.

C. Figure 9-3

1. Information in Figure 9-3 Violates the OMB and NIST IQS Objectivity Standards

Figure 9-3 from NCSTAR 1-6 is reproduced again below:

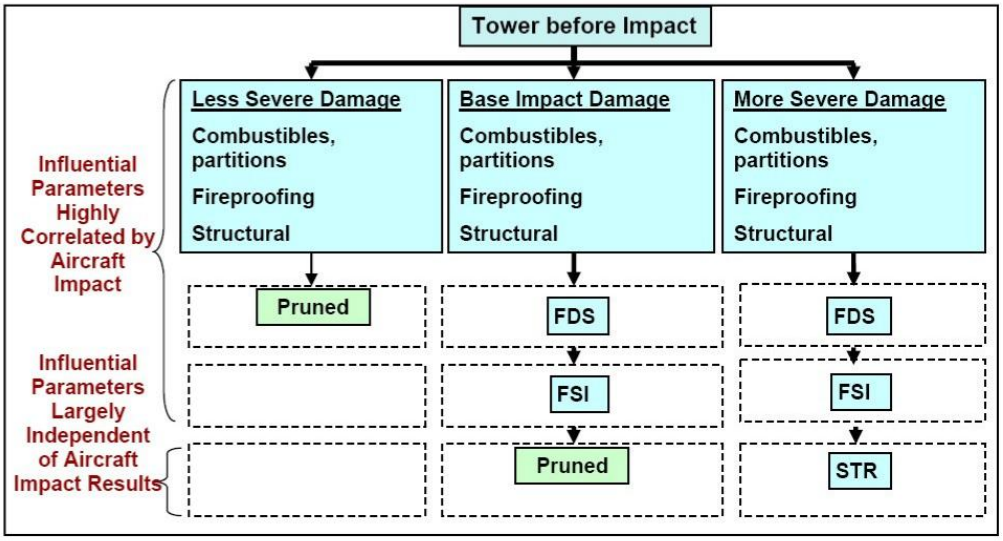

Figure 9–3. Pruned analysis tree for influential parameter effects.

The WTC Report clearly indicates that its core portion of the STR (Structural/Thermal Response) Model is inconsistent with Figure 9-3 above. In regards to the core columns of each of the Twin Towers, the WTC Report states that "In both WTC 1 and WTC 2, significant weakening of the core due to aircraft impact damage and thermal effects **was also necessary to initiate building collapse**." (NCSTAR 1-6 p.322) (emphasis added). So, it was critical to the WTC Report's collapse theory to show a significantly weakened core.

At the outset of the model, the WTC Report reveals a problem:

> The isolated core models did not converge for WTC 1 case B and WTC 2 case D structural impact damage, which had more severed columns than Cases A and C. The core needed to redistribute loads to other areas in the global system for a stable solution with Cases B and D structural damage. (NCSTAR 1-6 p. lviii)

> Case B and D impact damage could not be used for the isolated core models as no stable solution was obtained. Instead, for WTC 1, Case A impact damage was used for both Case A and Case B temperature histories and, for WTC 2, Case C impact damage was used for both Case C and Case D temperature histories. (NCSTAR 1-6 p.187)

In other words, the foregoing passages indicate that the more severe case impact damage results could not be used to perform the temperature evaluation because the buildings fell

down too soon (ie. no "stable solution" was obtained). So, the WTC Report used the base case impact damage to evaluate the base case and severe case temperature histories. However, this use of the base case for the impact damage proves that Figure 9-3, shown above, is not accurate. Figure 9-3 indicates that the base damage case was "pruned" for the STR analysis, and that only the more severe damage case was used for the STR analysis. It is clear, therefore, that either Figure 9-3, or the paragraphs referenced above, are inaccurate, unreliable and biased, because they are not consistent with one another. This inconsistency clearly violates OMB's and NIST's objectivity standards, and because the inconsistency is so blatant, Requesters have easily overcome any presumption of objectivity that may be asserted by NIST. This inconsistency also violates utility standards because a scientific report that is not self-consistent is not useful to the reader for any relevant purpose.

Another inconsistency related to the difference between the base cases (A and C) and the severe cases (B and D) is that when the temperature histories were applied to all four cases, the columns in the base case of WTC 1 buckled, but the columns in the severe case of WTC 2 did not.

> Case A resulted in column buckling. Case B resulted in column buckling. (NCSTAR 1-6 p.188)
>
> No columns buckled in either Case C or Case D. (NCSTAR 1-6 p.192)

This means that Figure 9-3 is now wrong on two counts, since the severe case must be rejected once again for WTC 2. Furthermore, if no columns buckled in either Case C or Case D, it means that the computer simulations did not predict that WTC 2 would collapse. After all, "In both WTC 1 and WTC 2, significant weakening of the core due to aircraft impact damage and thermal effects was also **necessary** to initiate building collapse." (NCSTAR 1-6 p.322) (emphasis added).

This contradiction violates applicable information quality standards that govern influential scientific information. No qualified member of the public can perform an independent reanalysis and reconcile the statement that core weakening was necessary to initiate building collapse with the statement that no core columns buckled during the computer simulations run for WTC 2. This ability by a member of the public to perform an independent reanalysis is required under applicable information quality guidelines.

This contradiction also violates the information quality standards of utility and objectivity. A report that is internally inconsistent and self-defeating is not useful for any purpose, nor is it unbiased, accurate or reliable. This inconsistency is, again, so blatant and obvious that any presumption of objectivity has been overcome.

2. Correction Sought: Revise Figure 9-3 or NCSTAR 1-6 Details to Resolve Inconsistency

Requesters hereby request that the WTC Report be revised so that the text of NCSTAR 1-6 referenced above is made consistent with Figure 9-3. This may involve revision of Figure 9-3, or NCSTAR 1-6, or both.

Requesters further request that the WTC Report be revised either to clearly state and convey to the reader that its own computer simulations did not predict that WTC 2 would collapse from the aircraft damage and resulting fires, or revise its statement that "significant weakening of the core due to aircraft damage and thermal effects" was "necessary" for structural collapse. This change is required under applicable information quality standards because no columns buckled in the computer simulations in either case for WTC 2. Furthermore, if NIST chooses to revise its report by saying that significant weakening of the core is not necessary for structural collapse, then it must give persuasive, objective reasons for abandoning the idea that weakening of the core is necessary for structural collapse to occur.

D. Floor Sagging

1. The Amount of Floor Sagging Used in NIST's Computer Simulations Violates the DQA, and OMB/NIST IQS Objectivity, Utility, and Integrity Standards

The amount of floor sagging calculated by the NIST computer models and the amount of floor sagging measured during NIST's physical tests are clearly inconsistent with each other. This clear inconsistency must be addressed if NIST hopes to make the WTC Report compliant with the strictures of the DQA and applicable information quality standards.

First, Figure 3-15 from NCSTAR 1-6 depicts the amount of floor sagging measured during NIST's physical fire resistance testing of the WTC floor system. In these tests, even after subjecting the floor assemblies to fires lasting far longer than the duration of the fires in the WTC, the maximum measured floor deflection (or sagging) was less than 16 inches. However, the more realistic fire duration of 50 minutes caused a deflection in NIST's physical tests of less than 4 inches.

Second, as shown in Figure 4-24 from NCSTAR 1-6, NIST's computer simulations calculated a maximum deflection of more than 42 inches. Confusingly, the deflection calculated by NIST's computer simulations was more than 10 times the amount of deflection measured in NIST's physical tests resulting from a realistic fire duration, and about triple the maximum amount of deflection measured during unrealistic fire durations.

This extreme inconsistency is a clear violation of the DQA, OMB Guidelines and NIST IQS standards for objectivity. Specifically, an unbiased, accurate, reliable report

would make sure that its computer simulations approximated physical reality. NIST's computer simulations clearly fail to approximate physical reality because the simulated results are extremely divergent from NIST's measured physical results. Moreover, the objectivity standards for scientific information under the NIST IQS require analytic results to be developed using sound statistical and research methods. Again, NIST clearly failed to use sound statistical or research method because NIST arbitrarily and capriciously used computer simulations that did not represent physical reality and which contradict NIST's own physical test results.

2. Correction Sought: Revise NCSTAR 1-6 to Resolve the Inconsistency Between Figures 3-15 and 9-6

Requesters hereby request that NCSTAR 1-6 be revised to resolve the inconsistency between Figures 3-15 and 9-6, namely that the amount of floor sagging measured during NIST's physical tests of the floor assemblies is far smaller than the amount of floor sagging calculated by NIST's computer simulations. Specifically, computer simulations should be run using maximum floor deflections that approximate physical reality, as measured by NIST's physical tests, the results of which are depicted in Figure 3-15. Alternatively, NIST can revise NCSTAR 1-6 to clearly explain the discrepancy between Figures 3-15 and 9-6. Here again, NIST is advised that circular logic (e.g. the buildings would not have collapsed) is totally inadequate as a justification under any relevant scientific reasoning principles or applicable information quality standards.

E. The WTC Steel Temperature

1. NIST's Explanation of the Temperatures Reached by the Steel Contradicts its Conclusions, which Violates the DQA, and OMB/NIST IQS Objectivity, Utility, and Integrity Standards

In NCSTAR 1-3, NIST explains that more than 170 areas were examined on the steel recovered from the Twin Towers for evidence of fire exposure. (*See* NCSTAR 1-3, p. xli). There, NIST reports that only three locations bore evidence that the steel reached temperatures above 250°C, and admits that one of those three locations appeared to have experienced temperatures above 250°C in the debris pile after collapse. (*See id.*) Furthermore, none of the steel NIST tested showed microstructure alterations that would have indicated exposure to temperatures above 600°C. (*See id.*)

Many times throughout NCSTAR 1-3 and its supporting reports, NIST reminds the reader that these steel temperature tests were only conducted on less than 1 percent of the columns in the fire region, and thus, are not representative of the general conditions in the core. (*See e.g.*, NCSTAR 1-3, p. 101). However, these assurances from NIST directly contradict earlier statements NIST made in its "December 2003 Public Update on the Federal Building and Fire Safety Investigation of the World Trade Center Disaster." (*See* NIST Special Publication 1000-4, available at http://wtc.nist.gov/media/PublicUpdateFinal.pdf). Therein, NIST states that it "has in its

possession about 236 pieces of WTC Steel". (*See id* at p.8) Additionally, "[r]egions of impact and fire damage were emphasized in the selection of steel for the Investigation." (*Id.*) "NIST has samples of all 14 grades of steel used in the exterior column-spandrel panels. It also has samples of two grades of steel used for the core columns (wide flange and built-up box columns) that represent steel used to fabricate 99 percent of the core columns. Most importantly, "**NIST believes that this collection of steel from the WTC Towers is adequate for purposes of the Investigation**," which included estimating the maximum temperature reached by the steel. (*See id.*) (emphasis in original).

The contradiction between NIST's first public statement that it had enough steel to conduct its investigation (including estimating the maximum temperature reached by the steel), and its later public statement that the amount of steel was inadequate to estimate the maximum temperatures reached by the steel could not be more clear. This is especially true in light of NIST's first public statement that the 236 pieces of steel were specifically selected from the regions that experienced fire and impact damage.

The larger question presented by NIST's wholesale discounting of the physical steel temperature tests is this: If the physical steel temperature tests are not useful for understanding the overall condition of the Twin Towers while they were standing, why would NIST report them at all? By reporting that very little of the steel tested reached temperatures above 250°C, and that none of the steel tested reached temperatures above 600°C, NIST unnecessarily arouses the suspicion that the steel in the Twin Towers did not reach a temperature high enough to initiate collapse.

The physical tests for steel temperature are vitally important to support the conclusions reached by NIST. For example, as mentioned in the previous section, NIST computer simulations calculated more than 42 inches of deflection in the floor trusses occurred at 700°C. NIST also uses many other steel temperatures above 600°C throughout the WTC Report. NIST's use of 700°C as a realistic temperature for the steel in its computer simulations is problematic for two reasons: (1) NIST has no physical data to support steel temperatures of 700°C; and (2) NIST possesses physical data that proves the exact opposite, namely that no steel tested reached temperatures of greater than 600°C.

This gross inconsistency between the NIST's physical data and its computer models must be explained in accordance with the DQA, OMB Guidelines and NIST IQS standards for objectivity. Specifically, an unbiased, accurate, reliable report would make sure that its computer simulations approximated the physical reality that no steel tested reached a temperature above 600°C. NIST's computer simulations clearly fail to approximate physical reality because the simulated results routinely use steel temperatures above 600°C. Moreover, the objectivity standards for scientific information under the NIST IQS require analytic results to be developed using sound statistical and research methods. Again, NIST clearly failed to use sound statistical or research methods because NIST used computer simulations that did not represent physical reality and which contradict NIST's own physical test results.

2. Correction Sought: Revise NCSTAR 1-6 to Resolve the Inconsistency Between NIST's Physical Test Data and NIST's Computer Models

Requesters hereby request that NCSTAR 1-6 be revised to make its computer simulation conditions actually simulate the physical reality, as determined by NIST's physical tests of the steel. NIST has provided absolutely no justification for allowing its computer simulations to heat the steel to temperatures well above 600°C when its own physical tests reveal that little, if any, of the steel inside the WTC ever reached 600°C. In fact, NIST's tests reveal that little, if any, of the steel reached temperatures above 250°C. Until NIST can provide a computer model that results in structural failure, while at the same time keeping the simulated conditions approximately equivalent to the actual physical conditions, NIST is in violation of the DQA, OMB Guidelines and NIST IQS standards for objectivity, and objectivity with regards to scientific information. Computer models that fail to approximate physical reality are also hardly useful for any purpose, including satisfying NIST's statutory duty to explain the technical causes of the building failure.

F. The Goal of the WTC Report and Its Overall Analysis

1. The WTC Report's Stated Goal and Overall Analysis Violates the DQA, and OMB/NIST IQS Objectivity, Utility, and Integrity Standards

The stated goal of the WTC Report, in its Executive Summary was "To investigate the building construction, materials used, and the technical conditions that contributed to the outcome of the WTC disaster after terrorists flew large jet-fuel laden commercial airliners into the WTC Towers." (NCSTAR 1, p. xxxv) One of the more specific goals was to "Determine why and how WTC 1 and WTC 2 collapsed following the initial impacts of the aircraft." (*Id*.) However, the NIST's mandate was made clear in the NCST Act: to "establish the likely technical cause or causes of the building failure." *See* 15 U.S.C. § 7301(b)(2)(A). Implicit in the foregoing section of the NCST Act is that the failure of the entire building must be explained. Thus, the WTC Report's stated goal and objective should simply read: "To establish the likely technical cause or causes of the total failure of WTC 1 and WTC 2."

Instead, NIST shirked its responsibilities under the NCST Act, by stating in a footnote that "The focus of the Investigation was on the sequence of events from the instant of aircraft impact to the initiation of collapse for each tower. For brevity in this report, this sequence is referred to as the 'probable collapse sequence,' although it includes little analysis of the structural behavior of the tower after the conditions for collapse initiation were reached and collapse became inevitable." (NCSTAR 1, p. xxxvii, fn 2) (emphasis added). In fact, describing the analysis of the structural behavior after collapse initiation as "little" is quite an understatement. Out of the entire 10,000+ page WTC Report, less than one-half of a page is devoted to the "Events Following Collapse Initiation," which constitutes fully 0.005% of the entire report. (NCSTAR 1, p.146). However, NIST was tasked with explaining why the entire building failed, not just the

collapse initiation. NIST's use of the term "probable collapse sequence" is extremely deceptive and clearly violates applicable information quality standards because (1) building collapse is not "probable" based on NIST's own analysis, as described above, and (2) the "sequence" of the collapse is not explained anywhere in the WTC Report; only a collapse initiation explanation is attempted. A more accurate phrase to use in its place, and one that would satisfy objectivity information quality standards, would be "theoretical collapse initiating event".

In the section entitled "Events Following Collapse Initiation", the WTC Report tells the reader that once downward movement of the portion of the building above the collapse initiation zone started to move downward, the "story immediately below the stories in which the columns failed was not able to arrest this initial movement as evidenced by videos from several vantage points." (NCSTAR 1, p.146) This is a prime example of NIST's failure to fulfill its duty under the NCST Act, namely to establish the cause of the building failure. Here, NIST has not offered any explanation as to **why** (ie. the technical cause of) the story below the collapse zone was not able to arrest the downward movement of the upper floors. The statement "as evidenced by videos from several vantage points" is only an explanation of **what** occurred, but gives the reader absolutely no idea **why** it occurred. Basic principles of engineering (for example, the conservation of momentum principle) would dictate that the undamaged steel structure below the collapse initiation zone would, at the very least, resist and slow the downward movement of the stories above. There is, indeed, a good chance that the structural strength of the steelwork below would arrest the downward movement of the stories above. NIST must explain **why** the intact structure below the impact zone offered so little resistance to the collapse of the building in order to comply with applicable information quality standards. The families of the firefighters and WTC employees that were trapped in the stairwells when the entirety of the WTC Towers collapsed on top of them would surely appreciate an adequate explanation of **why** the lower structure failed to arrest or even resist the collapse of the upper floors. Furthermore, given that fires in steel-framed high rise structures located in Los Angeles, California, Caracas, Venezuela, Philadelphia, Pennsylvania, New York, New York and elsewhere burned far longer and hotter than the fires in the Twin Towers but suffered no collapse or only limited and partial collapses, NIST has a responsibility to determine why, after collapse initiation occurred, the Twin Towers suffered complete and total destruction as opposed to only partial collapses.

The same section of the WTC Report offers still more hollow reasoning: "The structure below the level of collapse initiation offered minimal resistance to the falling building mass at and above the impact zone. The potential energy released by the downward movement of the large building mass far exceeded the capacity of the intact structure below to absorb that through energy of deformation." (NCSTAR 1, p.146) A true scientific study examining the failure of the entire building would offer calculations to support this bald assertion. However, the reader is not given any calculations regarding (1) the amount of potential energy released by the downward movement, or (2) the capacity of the intact structure below to absorb the energy so released. The baseless assertion that the potential energy released was greater than the absorptive capacity of the

lower intact structure can hardly be called scientific without supporting data. Again, NIST statutorily owes the families of those that died in the Twin Towers on 9/11 an explanation of why the building completely and totally failed in the manner it did, and that explanation must comport with the principles and requirements of the DQA.

Finally, the same section goes on to state "Since the stories below the level of collapse initiation provided little resistance to the tremendous energy released by the falling building mass, the building section above came down essentially in free fall, as seen in videos. As the stories below sequentially failed, the falling mass increased, further increasing the demand of the floors below, which were unable to arrest the moving mass." (NCSTAR 1, p.146) Again, the reader is given no estimate or supporting calculations of the "tremendous energy released by the falling building mass", nor any support for the statement that "the falling mass increased" as the stories failed. In fact, pictures and videos of the collapses clearly depict mass in the form of building debris and dust being ejected from the building in all directions during the collapses. Such ejected debris and dust could hardly contribute to the falling mass as NIST has asserted. It is also apparent from the videos and pictures of the collapses available in the public domain that the upper portion of WTC 1 did not fall as a block upon the lower undamaged portion, but instead disintegrated as it fell. Thus, there would be no single large impact from a falling bock, as implied by the wording of the WTC Report quoted above. In reality, there would be a series of small impacts as the fragments of the disintegrating upper portion arrived. In short, the phrase "falling building mass" used in the WTC Report suggests a solid block and is therefore misleading. This deceptive wording indicates an intent on the part of NIST to create a false impression of the manner in which the collapse began and progressed, in the belief that the average reader would simply accept the authority of the report and would not study the videos and pictures closely.

Furthermore, the mere fact that complete collapse occurred is not at issue here. The "as seen in videos" statement is superfluous because it only proves **what** happened. NIST was tasked with explaining **why and how** collapse occurred, not what occurred. (NCSTAR 1, p. xxxv) If the only explanation needed for the complete failure of the building comes from the videos of the collapses, the NCST Act was meaningless. It is obvious, as NIST has pointed out, that the floors below the collapse zone offered little or no resistance to the falling mass above. The relevant question, which NIST was tasked to answer under the NCST Act, is **why** the floors below offered little to no resistance to the collapse. It is abundantly clear from reading the WTC Report's half-page analysis of the "Events Following Collapse Initiation" that NIST has not fulfilled its responsibility under the NCST Act to establish the likely technical cause of the entire building failure.

Again, objectivity under the OMB and NIST IQS Guidelines requires that the information is accurate, reliable, and unbiased. The WTC Report's stated goal of establishing "the technical conditions that contributed to the outcome of the WTC disaster after terrorists flew large jet-fuel laden commercial airliners into the WTC Towers" is not unbiased because it shows a clear predilection for finding that the commercial airliners plus resulting fires were the cause of the collapses. An unbiased

investigation would consider all the evidence and form a hypothesis based on such evidence.

Furthermore, for scientific information to be objective, the original and supporting data must be generated, and the analytic results must be developed, using sound statistical and research methods. Here, no original or supporting data was apparently generated for the events following "collapse initiation" by NIST's own admission. If such data was generated, it was certainly never disclosed or discussed. Moreover, the analytic results (namely that the intact lower structure offered little to no resistance to the collapse of the upper floors) are not supported by any calculations, data, or computer modeling. Calculations and/or computer models are necessary to satisfy the "sound statistical and research methods" standard under applicable information quality guidelines. As such, the WTC Report analysis of the conditions following "collapse initiation" is far from "objective" under applicable guidelines for scientific information. By modeling the Towers' behavior after collapse initiation, NIST could fulfill the additional goal of verifying their pre-collapse computer models. In other words, if NIST can develop a post-collapse-initiation computer model that relies on the same physical parameters used in the pre-collapse computer models, and such computer model approximates what was actually observed during collapse, NIST will have validated the physical parameters used in its pre-collapse computer models.

Additionally, "in a scientific … context, the supporting data and models [should be disseminated], so that the public can assess for itself whether there may be some reason to question the objectivity of the sources. Where appropriate, **data should have full, accurate, transparent documentation, and error sources affecting data quality should be identified and disclosed to users**." 67 F.R. 8452. (emphasis added). With regards to the events following collapse initiation, including the "potential energy" of the upper stories and the absorptive capacity of the "intact" lower stories, absolutely zero data is disclosed to the reader of the WTC Report, possibly because absolutely zero data was generated by NIST in this regard. This can hardly qualify as a "full, accurate, transparent documentation," including error sources. The suspicion remains that NIST did generate this data and suppressed it because it did not support the plane and fire damage collapse theory.

Further, the WTC Report does not satisfy the applicable information quality standards of "utility". "Utility" under the NIST IQS means that the information is "useful to its intended users". The term "useful", in turn, means that the information is "helpful, beneficial, or serviceable to its intended users." Because it has clearly been shown that the WTC Report does not establish the cause of the entire building failure, it is not useful to its intended users, namely the policy makers, 9/11 victims' family members, researchers, and the general public. In fact, by wholly failing to explain the behavior of the structures after "collapse initiation", the reader of the WTC Report cannot use it for any purpose whatsoever, including establishing building codes or simply finding out how and why the buildings completely and totally failed to stand.

The bias of the WTC Report is perhaps the most violative of any of the information quality standards. The WTC Report states that "NIST found no corroborating evidence for alternative hypotheses suggesting that the WTC Towers were brought down by controlled demolition using explosives planted prior to September 11, 2001." (NCSTAR 1, p.146) However, this statement ignores a huge body of publicly available evidence to the contrary[1]. Most importantly, it completely ignores testimony of New York firefighters on the scene, made available to the public by the New York Times under a FOIA request, which include a vast number of reported explosions immediately preceding the collapses. The firefighter oral histories are available at the following New York Time website: http://graphics8.nytimes.com/packages/html/nyregion/20050812_WTC_GRAPHIC/met_WTC_histories_full_01.html. We can be assured that this data was available to NIST long before it was made publicly available because NIST was granted broad subpoena power under the NCST Act. *See* 15 U.S.C. § 7303. The following are some examples of explosions reported by the NYC firefighters available at the NY Times website above (emphasis added):

> You **see three explosions** and **then** the whole thing coming down. (F. CAMPAGNA file #9110224, p.8)
>
> Then the south tower—we heard an **explosion, looked up**, and the building started to **collapse**. (E. SHEEHEY file #9110226, p.3)
>
> …**we heard the explosion and the building started to come down**…2 World Trade Center started to collapse. (J. RAE file #9110294, p.3)
>
> You could hear **explosions**. We didn't know what it was. We thought it was just a small collapse. As I looked straight ahead of me, I saw total darkness. Everything was coming our way like a wave. (F. CAMACHO file #9110318, p.4)
>
> As we walked through those revolving doors, that's when we felt the rumble. I felt the rumbling, and then I felt the force coming at me. I was like, what the hell is that? In my mind it was a bomb going off.
> The pressure got so great, I stepped back behind the columns separating the revolving doors. Then **the force** just blew past me. It **blew past me it seemed for a long time**. In my mind I was saying what the hell is this and when is it going to stop?

[1] Further evidence of NIST ignoring relevant evidence of controlled demolition is provided by NIST's FAQ (published here: http://wtc.nist.gov/pubs/factsheets/faqs_8_2006.htm) wherein NIST admits that "NIST did not test for the residue of these [explosive] compounds in the steel." Thus, it is exceedingly easy for NIST to say that it "found no evidence" when NIST readily admits that it wasn't looking for any evidence. The phrase "found no evidence" deceptively implies that NIST was looking for evidence, which it clearly was not. A chemical analysis for explosive residue on the steel or in the dust would be a simple task for NIST to complete, and could put to rest (or conclusively prove) the theory that explosives were responsible for the collapses of the Twin Towers.

Then it finally **stopped**, that pressure which I thought was a **concussion of an explosion**. It turns out it was the down pressure wind of the floors collapsing on top of each other. At that point everything went black, and **then the collapse came**. It just rained down on top of us.
There were secondary explosions, I don't know, aerosol cans or whatever. But we're in the darkness. We see basically the glow of a flashlight and still things coming down. The noise, the **explosions**, whatever it was. (J. MALLEY file #9110319, p.5,6)

…we were taking a break on 30, and that's when we heard a rumble, outside **explosion**, and I think that was the other building coming down…
I heard an **explosion** and turned around and the building was coming down. (J. IPPOLITO file #9110342, p.5,8)

…as I was looking at him **I heard the explosions**, looked up, **and saw** like **three floors explode**, saw the antenna coming down, and turned around and ran north. (K. GORMAN file #9110434, p.6)

…**we heard this huge explosion**, and that's when the tower started coming down. (R. CHELSEN file #9110475, p.9)

…**there was a tremendous boom, explosion**, we both turned around, and the top of the **building was coming down** at us. (E. KENNEDY 9110502, p.7)

I guess about three minutes later you just heard **explosions** coming from building two, the south tower. It seemed like it took forever, but **there were about <u>ten</u> explosions**. We then realized the building started to come down.
Q. When the north tower was coming down, did you have any indication? Did you hear the explosions again? Did anybody warn you like they heard on the radio of anything like that?
A. You did hear the explosions. The second one coming down, you knew the explosions. Now you're very familiar with it. (C. CARLSEN file #9110505, p.6-10)

First I thought it was an explosion. I thought maybe there was a bomb on the plane, but delayed type of thing, you know, secondary device.
Q. (Chief Art Lakiotes) I was convinced for a week it was secondary devices.
A. You know, and **I** just **heard** like **an explosion** and a then a cracking type of noise, and **then it sounded like a freight train**. (T. JULIAN file #9110386, p.10)

I don't know what time later a loud rumble—it **sounded like an explosion**. We thought it was a bomb. **We ran under the bridge**, me,

> Joe Cassaliggi and two police officers; I think one police officer and one Secret Service. We ran under the bridge. There's a column there, over here, right on the sidewalk, a big six foot round masonry column.
> We get behind that, **and number two tower comes down** and debris comes right around us. (T. SPINARD file #9110445, p.9)

Also telling are the many reports of explosions and fires taking place lower in the buildings than the impact zones (emphasis added):

> For whatever reason, I just happened to look up and saw the whole thing coming down, pancaking down, and the **explosion**, blowing out about **halfway up**. (H. SCOTT file #9110365, p.6)

> Then the **building popped, lower than the fire**…it seemed like…there is **a secondary device** because the way the building popped I thought it was an explosion. (T. BURKE file #9110488, p.8)

> Q. Bill, just one question. The fire that you saw, **where was the fire**? Like up at the upper levels where it started collapsing?
> A. It **appeared** somewhere below that. Maybe **twenty floors below the impact** area of the plane. I saw it as fire and when I looked at it on television afterwards, it doesn't appear to show the fire. It shows a rush of smoke coming out below the area of the plane impact.
> The reason why I think the cameras didn't get that image is because they were a far distance away and maybe I saw the bottom side where the plane was and the smoke was up above it. (W. REYNOLDS file #9110288, p.4)

An unbiased NIST investigation would consider these multiple, credible, mutually supporting, publicly available reports of explosions inside the Twin Towers and perform scientific tests for explosive residue on the steel samples in its possession. Contrary to this logical assumption, NIST has publicly stated that it "did not test for the residue of these compounds in the steel." *See* NIST "Answers to Frequently Asked Questions", available at http://wtc.nist.gov/pubs/factsheets/faqs_8_2006.htm. Thus, the entire WTC Report is clearly biased in favor of finding that the airplane impacts and resulting fires were the only cause of the collapses of the Twin Towers.

2. Correction Sought: Revise the WTC Report to Comply with Information Quality Standards

Requesters hereby request that NIST revise the WTC Report to remove any bias towards finding that the impact of jet airliners plus the resulting fires were the only cause of the collapse of the Twin Towers. The specific revisions needed include:

a. Revise the stated goal of the WTC Report to remove the obviously biased statement "after terrorists flew large jet-fuel laden commercial airliners into the WTC Towers."

b. Further revise the stated goal and objective of the WTC Report to make it consistent with NIST's mandate under the NCST Act. Specifically, the stated goal and objective should simply read "To establish the likely cause or causes of the complete failure of WTC 1 and WTC 2."

c. Replace the phrase "probable collapse sequence" with the phrase "theoretical collapse initiating event".

d. Revise NCSTAR 1, Section 6.14.4, which is found on p.146, to account for the large body of mutually supporting oral firefighter testimony regarding the presence of explosives, especially explosions occurring below the collapse zone.

e. Further revise NCSTAR 1, Section 6.14.4 with tests conducted by NIST for residue compounds indicative of explosive use. If no such tests were actually conducted, such tests must be conducted and the results included in the WTC Report in order for the report to be truly unbiased.

Requesters hereby further request that NIST revise the WTC Report so that the scientific information presented therein is accurate and reliable in compliance with the "objectivity" information quality standards for scientific information. Such compliance means that the scientific information be supported by full, accurate, transparent documentation, and that error sources affecting data quality be identified. The specific revisions needed include:

f. Revise NCSTAR 1, Section 6.14.4 to include supporting data, with transparent documentation and identification of error sources, with regards to (1) the potential energy released during the downward movement of the upper stories, (2) the absorptive capacity of the intact structure below the collapse zone, and (3) the increase of the falling mass as subsequent stories failed during collapse. The entire Section 6.14.4 is pure conjecture, and is clearly not compliant with scientific information quality standards without such supporting data, documentation and error sources.

g. If NIST determines, through calculations and/or computer modeling, that the absorptive capacity of the intact structure below the collapse zone was greater than the energy released by the falling mass in the upper stories, NIST must further revise NCSTAR 1, Section 6.14.4 to include an explanation of **why** the floors below the collapse zone were unable to resist the falling mass of the upper floors.

h. Further revise NCSTAR 1, Section 6.14.4 with the results of tests conducted by NIST for residue compounds indicative of explosive use. If no such tests were actually conducted, such tests must be conducted and the results included in the WTC Report in order for the report to be truly objective. The multiple, credible reports of explosions in the Twin Towers require NIST, under applicable information quality standards, to fully investigate the possibility that explosives were used to bring down the Twin Towers. Such explosive residue tests are relatively inexpensive and easy to

perform, and should have been included in the WTC Report initially in order to conform to the requirements of the DQA.

Requesters further request that NIST revise the WTC Report so that the information presented therein is "useful" in that it is "helpful, beneficial, or serviceable to its intended users" in accordance with applicable information quality standards. To comply with this request, NIST must revise section 6.14.4 by adding a detailed computer simulation or physical structural simulation detailing the behavior of the structure after "collapse initiation." NIST's implication that total and complete structural collapse and the destruction of the entire building was inevitable following "collapse initiation" is unsupported by the laws of physics, logic, history, data, calculations, science of any kind, computer models, or physical models. Again, NIST is advised that using circular logic (ie. trying to use the fact that the Towers did, in fact, totally and completely collapse "as seen in videos" to prove that total and complete collapse was imminent following "collapse initiation") is wholly inadequate to satisfy NIST's burden of explaining **how and why** the buildings collapsed. Even if a collapse event were initiated as NIST has suggested, NIST still has the burden of explaining why the Twin Towers suffered **total** collapses, when all other high rise fires in modern steel-framed structures have resulted in no or only very limited and **partial** collapses. Furthermore, it is clear that, under the NCST Act, NIST was required to explain why and how the entire building completely failed to stand, not just how "collapse initiation" was reached. Finally, NIST is not permitted to refer to any documents outside the WTC Report to satisfy its obligations under the NCST Act and the DQA, as outlined herein. NIST was charged with explaining the collapses of the World Trade Center Towers, which means NIST must itself generate and disseminate the scientific explanation in the form of the WTC Report, as required by the NCST Act.

VI. Requesters are Affected by NIST's Information Quality Standards Violations

A. Bob McIlvaine

Bob McIlvaine ("McIlvaine") is the father of Robert ("Bobby") McIlvaine, who was inside the North Tower when it collapsed on 9/11. Bobby began his job as an Assistant Vice President for Merrill Lynch about a month prior to 9/11. McIlvaine has been intensely grieving the loss of Bobby, and has spent every day since searching for answers. NIST was statutorily tasked with giving McIlvaine some of the answers he has been seeking.

By giving a scientifically accurate explanation of how the collapses of the Twin Towers occurred and what caused them, McIlvaine could start to answer the most important question of all: who killed Bobby. If NIST could scientifically prove that airplane damage plus the resulting fires was the sole cause of the Twin Towers' complete and total collapse, McIlvaine would be more confident that Muslim terrorists could have killed his son Bobby. However, if NIST cannot prove that airplane damage plus the resulting fires was the sole cause of all of the destruction witnessed at the WTC Towers

on 9/11, then other factors must have been at work, and other people must have been involved in the murder of his son.

Therefore, it is particularly imperative that NIST fulfill its statutory duty to scientifically explain the collapses in accordance with all applicable information quality standards in order for the family members of those that were killed in the WTC to find closure. The scientifically flawed WTC Report injures all of the family members of those killed in the collapses, including Bob McIlvaine, in such an acute and palpable way, that NIST has a solemn duty to correct the WTC Report as requested by this Request. If NIST fails to correct the WTC Report in accordance with this Request, it will have forever dishonored the names of the people that died that day, and their surviving family members. Even if no one else in the United States deserves a straight answer as to why the Twin Towers collapsed the way they did, surely the victims' surviving family members do. Bob McIlvaine certainly deserves a straight answer, and NIST should give him one.

B. Bill Doyle

Bill Doyle lost his son Joey Doyle in the attacks of September 11, 2001. Joey Doyle was born March 28, 1976. He was a gifted athlete who joined his first baseball club just barely out of nursery school, the South Shore Little League and Babe Ruth League. Later, he attended St. Joseph-by-the-Sea High School where he starred on the baseball team. He received many awards including Staten Island Advance and Daily News All Star Honors in 1994. Joey attended Wagner College, where he earned a scholarship and graduated with a degree in business administration. He starred as a pitcher at Wagner College, where he ranks on the school's top ten list in five different career categories. He was known as "The Bulldog" to his teammates for his tenacity on the pitching mound and his desire to win. On April 6, 2002, the Wagner College Athletics program and the school's Alumni Office honored Joe by retiring his #34.

After college, Joey accepted a job offer at Cantor Fitzgerald. He was a government bond supervisor at Cantor for three years before his death in the North Tower on September 11, 2001. He was known as a dedicated employee who would often handle many tasks and work long hours. People who worked with Joe knew him as a person who would give a person who was having a bad day a good laugh and trying to help out anybody in need of assistance.

Bill Doyle and his family deeply miss Joey Doyle, and have been mourning his death ever since 9/11. NIST has a duty to help the family members of the victims of the 9/11 attacks achieve closure for the deaths of their loved ones by telling them the truth about what happened that day. NIST could have done a great service to their country and to the still grieving family members of those killed on 9/11 by providing a scientifically accurate and sound WTC Report. Because there remain so many scientific flaws and inaccuracies in the WTC Report, NIST has injured and continues to injure Bill Doyle in a very acute way that few can appreciate. NIST can redress this injury by revising its WTC Report as set forth herein, and allow those family members that are still wondering

exactly why their loved ones were killed to achieve closure for their losses. NIST needs to stop hiding the ball from these grieving family members and tell them exactly what happened on the morning of September 11, 2001.

C. Dr. Steven Jones

Dr. Steven Jones ("Jones") is a former tenured professor of physics at Brigham Young University. Jones was one of the first well-respected scientists with impeccable academic credentials to challenge the government sponsored theory that airplane damage plus fire was the sole cause of the collapses of the Twin Towers. Specifically, Jones has written a peer-reviewed paper challenging the findings of NIST's WTC Report, available at:
http://www.journalof911studies.org/articles/Why%20Indeed%20Did%20the%20WTC%20Buildings%20Completely%20Collapse%20Jones%20Thermite%20World%20Trade%20Center%20J24.pdf

However, because he publicly challenged the government's version of events, which is embodied in the WTC Report, Jones was criticized publicly in various media reports and by statements on official Brigham Young University websites. (*See, e.g.* http://newsnet.byu.edu/story.cfm/57724) A front-page article in the BYU Daily Universe dated October 23, 2006 was headlined: "BYU Professor Resigns Amid Sept. 11 Theory Flap". This article stated: "A Brigham Young University physics professor resigned from his post Friday, Oct. 20, 2006, six weeks after the school placed him on leave for making controversial remarks about the attacks of Sept. 11." (http://newsnet.byu.edu/story.cfm/61550) By putting NIST's credibility behind an unscientific and seriously flawed WTC Report, which by statute was supposed to represent the real explanation for the collapses of the Twin Towers, NIST's dissemination of information which violates the DQA (as outlined above) is the actual and proximate cause of Jones's loss of employment and injury to his reputation. Jones's injuries are directly traceable to NIST's actions because NIST failed to provide a scientific explanation that takes into account laws of physics Jones had been studying and teaching in the classroom for years. Thus, NIST's utter failure to provide a report on the collapses of the Twin Towers in compliance with applicable information quality standards forced Jones into the position of having to challenge the official government version of the collapses. Jones was forced into this position because it would be impossible for him to support NIST's flawed findings in the WTC Report, while at the same time studying and teaching physics principles at Brigham Young University.

Jones's injuries can be redressed if NIST revises the WTC Report according to the points raised in this Request. Once the WTC Report is consistent with applicable information quality standards, Jones's good name in the community will be restored.

Jones has also suffered an informational injury based on the WTC Report. As a scientist affiliated with a major university (that is, until he was criticized on University web sites for challenging the findings of the WTC Report and strongly encouraged to leave BYU), his legitimate research regarding the events of 9/11 has been hindered by

NIST's publication of the inaccurate, scientifically flawed WTC Report. His injury differs from the injury suffered by the public at large (which by itself is quite substantial), due to his status as a legitimate researcher with impressive academic credentials investigating the physics of the Twin Towers' collapses. A very small percentage of the population of the United States is as qualified as Jones to do independent research regarding the collapses of the WTC Towers. His informational injury can also be redressed if NIST revises its WTC Report in accordance with the applicable information quality standards, which are described more fully above.

D. Kevin Ryan

Kevin Ryan ("Ryan") is a former Site Manager for Environmental Health Laboratories, a division of Underwriters Laboratories ("UL"). Ryan, a chemist and laboratory manager, was fired by UL in 2004 for publicly questioning the contents of the WTC Report, which at the time was still being drafted by NIST. Ryan felt obligated to defend the good name and reputation of UL, his employer, which certified the steel assemblies used in the WTC Towers, against NIST's claims that the steel had softened and failed due to the briefly burning fires within the Twin Towers.

NIST's complete disregard for Ryan's legitimate scientific concerns about the substance of the WTC Report, and NIST's subsequent dissemination of the flawed WTC Report damaged Ryan's good name, standing and reputation in the community and within UL, and caused him to lose his job at UL. NIST now has the opportunity to address Ryan's concerns about the scientific basis and quality of the WTC Report, and in so doing restore some of his good name and reputation in the community, by substantively responding to this Request and revising the WTC Report as detailed herein.

E. Richard Gage, AIA Architect

Richard Gage, AIA Architect ("Gage") is an architect and a member of the American Institute of Architects. Gage has been a practicing architect for 20 years and has been responsible for the production of construction documents for numerous steel-framed and fire-protected buildings for uses in many different areas, including education, civic, rapid transit and industrial use. His most recent project involved a new $120M High School campus, and his next project is a large mixed use (office, retail, residential) project in Las Vegas, which will involve fire protected, steel framed buildings.

As an architect, he is affected by the inaccurate information in the WTC Report in a way that differs from the other Requesters, and in a way that differs from the general public. The building code changes NIST has recommended based on its flawed WTC Report, many of which may soon be implemented, will unnecessarily increase the cost of building design, and in some cases prohibitively so. The building code recommendations from NIST have been strongly criticized by the American Institute of Architects. *See* "The World Trade Center Investigation – The AIA's Response to NIST's Draft Report and Recommendations" dated August 4, 2005. This unnecessary increase in expense

associated with designing and building high rise structures will result in a reduced volume of such business for architects, including Gage. NIST must revise the WTC Report in accordance with the requests stated herein before it can adequately justify increasing the expense of designing and constructing buildings. In so doing, NIST can redress Gage's injury to his business.

Gage has also suffered an informational injury similar to Jones and Ryan. His legitimate research into the collapses of the Twin Towers been hindered by NIST's dissemination of the inaccurate, unsupported information in the WTC Report. Correction of the WTC Report as described herein is the only way Gage's informational injury can be rectified.

F. Scholars for 9/11 Truth and Justice

Scholars for 9/11 Truth and Justice ("Scholars") is a non-partisan organization consisting of independent researchers and activists engaged in uncovering the true nature of the September 11, 2001 attacks. Scholars emphasizes a scholarly and civil approach to inquiry. Scholars was founded in 2006 following a successful series of conferences and events examining the attacks of September 11, 2001 using the scientific method and stressing the analysis based on large bodies of evidence -- particularly relating to the destruction of the World Trade Center.

Scholars are affected by the scientifically flawed WTC Report because it is a group actively engaged in researching the attacks of 9/11, and its research has been severely hindered by NIST's publication of the WTC Report. This informational injury can be redressed when NIST corrects the WTC Report as set forth herein. Scholars' informational injury is directly traceable to NIST and its release of the flawed WTC Report because NIST had access to virtually all sources of proof during its investigation, which Scholars does not have. Scholars therefore relies almost exclusively on NIST and the WTC Report for information and analysis of the collapses based on evidence that is not in currently in the public domain. Although NIST was statutorily required to report the true cause of the collapses of the WTC Towers based on the evidence available to NIST, it failed to do so. This fact is plainly evident from the unsupported and unscientific conclusions contained in the WTC Report, many of which are outlined herein.

VII. Conclusion

For all of the foregoing reasons, we the undersigned Requesters, respectfully request that NIST revise its WTC Report in accordance with the arguments, requests and recommendations contained herein. NIST is hereby advised that if it does not comply with a particular request made herein, it must provide a complete and detailed explanation to Requesters as to why NIST has not complied with each such request. If no such detailed explanation is given to Requesters, NIST will have denied this Request in an arbitrary and capricious manner. Furthermore, Requesters again remind NIST that it

has a statutory duty to explain the cause of the collapses of the World Trade Center towers, a duty it has shirked. Please honor the names of those that perished in the Twin Towers on 9/11 and heed this reasonable request for a scientifically sound WTC Report. Your time and consideration is greatly appreciated.

_/s/Bob McIlvaine_____ _____
Bob McIlvaine Date

_/s/Bill Doyle_____ _____
Bill Doyle Date

_/s/Steven Jones_____ _____
Dr. Steven Jones Date

_/s/Kevin Ryan_____ _____
Kevin Ryan Date

_/s/Richard Gage_____ _____
Richard Gage, AIA Architect Date

_/s/Frank Legge_____ _____
Scholars for 9/11 Truth and Justice Date
By: Frank Legge

VIA Certified U.S. Mail, Return Receipt Requested
and e-mail (richard.kayser@nist.gov)

Dr. Richard F. Kayser
Deputy Director
National Institute of Standards and Technology
100 Bureau Drive, Mail Stop 1000
Gaithersburg, MD 20899-1000

RE: Information Quality Request #07-06

Dear Dr. Kayser,

The enclosed Request for Correction (the "Request") was submitted to the National Institute of Standards and Technology ("NIST") on April 12, 2007 by Bob McIlvaine, Dr. Steven Jones, Kevin Ryan, Richard Gage, AIA Architect, and Scholars for 9/11 Truth and Justice (referred to herein collectively as the "Requesters") under Section 515 of Public Law 106-554, the Data Quality Act, the Office of Management and Budget's government-wide Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, and NIST's "Guidelines, Information Quality Standards, and Administrative Mechanism."

NIST responded to the Request by way of a letter dated September 27, 2007 from Ms. Catherine S. Fletcher (the "Response"), a copy of which is enclosed herewith. While the Requesters appreciate the time and effort NIST personnel put into the Response, some troubling issues remain outstanding. This letter constitutes an appeal of the decisions handed down in the Response, and asks NIST, through its Deputy Director, to reconsider its position on the issues raised in the Request. The particular issues raised in the Request, and addressed in the Response, will be considered in detail below in the order they were addressed in the Request and the Response. However, the Deputy Director is cordially invited to read through the entire original Request (enclosed herewith for your convenience) in detail, because it raises serious issues with the WTC Report that have not been adequately addressed by the NIST personnel in charge of responding to it. The entire original Request is incorporated herein by reference, as if fully set out herein.

A. Rejection of the Less Severe Damage Estimates

In the Response, NIST indicated that it has issued an erratum to the WTC Report. This erratum removed one of the false justifications relied upon by NIST for rejecting the less severe damage case, namely the justification that "the towers would not have collapsed had the less severe damage results been used." However, the other false justification still remains in the WTC Report.

In order to continue rejecting the less severe damage estimate, NIST inexplicably continues to rely on the "key observable" that "no aircraft debris was calculated to exit the side opposite to impact … in contradiction to what was observed in photographs and videos of the impact event." This "key observable" should not be relied upon to make

any conclusions regarding the simulations for the simple reason that NIST admits in the Response that "uncertainties in the configuration of the building interior on the floors of impact … [influenced] the modeling results." As a result "none of the damage scenarios resulted in landing gear debris exiting the opposite face of the WTC 1 model." In sum, NIST relies on a "key observable" in rejecting the less severe damage case, while at the same time admitting that its own computer models are unable to accurately represent this "key observable." In the Response, NIST has done absolutely nothing to overcome the argument that either all of the computer models should be accepted or all should be rejected based on this "key observable," because none of the damage simulations resulted in this "key observable" occurring. The Requesters, therefore, again respectfully request that NIST revise the WTC Report so that only legitimate justifications are relied upon when accepting or rejecting a particular computer simulation.

Furthermore, the erratum makes no mention of the other justification NIST relies on in the Response for rejecting the less severe damage case, namely the "shifting of building contents due to the aircraft impact." NIST's reliance on this justification is puzzling, to be sure, in light of NIST's statement elsewhere in the WTC Report that "no visible information could be obtained for the extent of damage to the interior of the towers, including the structural system (floors and core columns), partition walls, and interior building contents." (*See* NCSTAR 1-2 (pp iv, xxxix)) NIST must explain how its reliance on "shifting of building contents due to the aircraft impact" as a "key observable" can be reconciled with its statement that NIST had "no visible information" regarding damage to the "interior building contents." The Requesters, therefore, again respectfully request that NIST address their concerns about the rejection of the less severe damage estimate without relying on false justifications (especially justifications that are contradicted by NIST's own statements elsewhere in the WTC Report) and provide the American people with the truth about why the less severe case was rejected.

It is clear to Requesters that the only justification NIST can rely upon for rejecting the less severe damage case is that the Towers would not have collapsed. Such reasoning is clearly circular and unscientific in that it assumes what has to be proved, and is in violation of the DQA, the NIST IQS and the OMB Guidelines governing scientific information and influential scientific information. Requesters also ask NIST and its Deputy Director to reconsider the analysis and requests contained in Section V.A. of their original Request because the Response does little to even attempt to refute what is contained therein.

B. NIST Computer Simulations

In the original Request, the Requesters questioned NIST's "pruning" of the analysis tree in Figure 9-2 to produce the "pruned" Figure 9-3. In its Response, NIST claims that the "pruned" analysis tree in Figure 9-3 "resulted from an orthogonal factorial design of experiments [OFD or DOE] analysis to identify the most influential parameters." However, this new statement is contrary to the description of the OFD in the WTC Report.

The orthogonal factorial DOE (OFD) used by NIST was intended to reduce the number of factors (or parameters), **not the number of levels**. As stated in NCSTAR 1-6, p. 290, "The OFD approach allowed for the identification of **influential parameters** (i.e. factors) that reduced the number of analysis runs in the global" experiments. With specific regard to the damage estimates, NCSTAR 1-6, Chapter 5 (cited in the Response), states that an "experimental design approach, using the method of orthogonal factorial design was used to determine the **parameters that had the greatest effect on the estimated damage**." (*See* NCSTAR 1-6, p. 121) However, the less severe (-), base (0), and more severe cases (+) are descriptions of the **levels** used in NIST's experiments, not parameters, and NIST makes no mention that OFD was used to exclude specific damage levels (cases). Instead, NIST states that it relied solely on "key observations" in deciding whether to exclude a particular damage case.[1] (*See Id*.) The stark contrast between an OFD, which determines "influential parameters," and exclusion of damage cases (levels) based on "key observables," could not be more apparent. NIST has not explained why the less severe or base levels (cases) were fully excluded once the desired factors (or parameters) had been established by NIST's OFD screening experiments. In a valid DOE, all levels should have been included in the final global analysis, including those represented by the less severe and base cases for any given set of factors. NIST's statement that it relied on its OFD analysis for excluding the less severe and base case damage estimates flies directly in the face of the description of the OFD process contained in the WTC Report.

The OFD approach used by NIST in the WTC Report has other serious problems. First, NIST's use of a Plackett-Burman design was not appropriate for the purpose of the WTC Report. NCSTAR 1-2B describes the reporting of the DOE analysis of sub-components. NIST used a Plackett-Burman design to screen out non-influential factors (or parameters) prior to conducting their global analyses. This was not appropriate for NIST's purposes, because a Plackett-Burman DOE assumes that interactions between factors are negligible. Not only was the validation of that assumption not reported but, for the factors analyzed, it is not likely to be valid. In order for these analyses to be useful under the DQA and related information quality guidelines, NIST must show the American public how this assumption is valid for all factors involved.

Second, the main and interaction effects for each factor were not reported. Although NIST reported graphically the main effects of some experiments used in the sub-component DOE analyses, the actual values for main effects were not reported. And as stated above, interaction effects were not calculated and were inappropriately assumed to be zero or negligible. Without these values, and a determination of resolution, independent qualified members of the public cannot establish the validity of the experiments.

Third, the magnitude used for each factor (or parameter) was not consistent in the sub-component analyses. When varying the magnitude of most factors, the minimum

[1] The Requesters have shown in the original Request, and in Section A above, how NIST's reliance on what it calls "key observables" in rejecting these damage cases is also scientifically untenable and in violation of the DQA.

values and maximum values were set equidistant from the baseline values. However, for the engine-core column impact analysis, the maximum "strain rate" was set ten times higher than the baseline value, at 1000% instead of 190% as would be expected in relation to the varying of other factors (*See* NCSTAR 1-2B, pp 178-180). For this and other reasons, NIST's treatment of "strain rate" in these virtual experiments is dubious, and the logic behind the selection of different magnitudes for the factors in NIST's screening DOE is questionable.

Fourth, the public cannot understand NIST's selection of factors in the DOE. It appears that the responses for each experiment were judged simply by whether or not they resulted in maximal damage to the building and components. On the other hand, NIST suggests in the Response that the results were judged by comparison to photographic evidence. These criteria are not in agreement. The public cannot verify NIST's comparison of experimental responses to photographic evidence without access to all the photographic evidence and the logic used. Specifically, the WTC Report should be revised to specifically include the photograph, photographs, and/or video still frames NIST used to verify its DOE analysis. The DQA and related guidelines require this revision because it will allow a qualified member of the public to perform an independent reanalysis and verify NIST's conclusions. Furthermore there is a need for NIST to release all photographic and video evidence in its possession in order that the public may have the opportunity to ensure that there are not other photos and videos which are capable of a different interpretation. Without such full release there is no way that the public can assure itself that NIST has not been selective in choosing its data.[2]

The Requesters, therefore, respectfully request reconsideration of all analysis and requests made in Section V.B. of the original Request, and consideration of the points made herein. Hand waving reliance on its OFD approach as a justification for excluding damage levels is a clear violation of the DQA and related guidelines. As it stands, the "pruning" of the less severe and base cases from the NIST computer simulation analysis and from the WTC Report itself clearly violates OMB's Guidelines and the NIST IQS standards of objectivity. An unbiased, accurate, reliable report would include the results of all of the computer simulations run, especially when the WTC Report already states that the less severe and base impact damage cases fit reasonably well with the observed damage. This is true because the objectivity standards for scientific information under the NIST IQS require analytic results to be developed using sound statistical and research methods. This is especially true in light of NIST's dubious design of its DOE analysis and its neglect of any interaction between factors considered.

Furthermore, the "pruning" of the less severe and bases cases from the WTC Report analysis violates the OMB Guidelines and NIST IQS as they govern "influential scientific information" and analytic results related thereto. The OMB Guidelines require such transparency about data and methods "that an independent reanalysis could be undertaken by a qualified member of the public." *See* 67 F.R. 8460. By "pruning" the less severe and base cases from its detailed analysis, no member of the public can look at

[2] This appeal letter is not a Freedom of Information Act request, and should not be treated as such.

the data and determine whether airplane impact damage plus the resulting fires alone resulted in the building collapse.

The Requesters are not the only members of the public that question NIST's computer simulations. An article in the journal New Civil Engineering (NCE) lends support to the Requesters' concerns about the NIST analysis of the WTC collapses. This article states, in relevant part:

> **World Trade Center disaster investigators [at NIST] are *refusing* to show computer visualizations of the collapse of the Twin Towers despite calls from leading structural and fire engineers**, NCE has learned. Visualisations of collapse mechanisms are ***routinely used to validate*** the type of finite element analysis model used by the [NIST] investigators. The collapse mechanism and the role played by the hat truss at the top of the tower has been the focus of debate since the US National Institute of Standards & Technology (NIST) published its findings….
>
> University of Manchester [U.K.] professor of structural engineering Colin Bailey said there was a lot to be gained from visualising the structural response. '**NIST should really show the visualisations; otherwise the opportunity to correlate them back to the video evidence and identify any errors in the modeling will be lost,**' he said….
>
> A leading US structural engineer said NIST had obviously devoted enormous resources to the development of the impact and fire models. 'By comparison the global structural model is not as sophisticated,' he said. '**The software used [by NIST] has been pushed to new limits, and there have been a lot of simplifications, extrapolations and judgment calls.**'

Parker, Dave (2005). "WTC investigators resist call for collapse visualisation," New Civil Engineer, October 6, 2005. (emphasis added)

Moreover, the "pruning" actually confuses the public into believing that all of the "pruned" levels lead to building collapse. The WTC Report should be revised to cure this clear bias. In sum, it is impossible for a qualified member of the public to read the WTC Report, undertake "an independent reanalysis," and come to the same conclusion as NIST, which is a clear violation of applicable information quality standards as detailed in the original Request. The appropriate action for NIST to take is to display the full set of pathways unpruned and to clearly mark those which do not result in collapse. This would allow the public to have a means to observe, at that point in the study, that collapse solely due to impact damage and fire is a matter of probability rather than a foregone conclusion to be merely explained.

C. Information in Figure 9-3 Violates the OMB and NIST IQS Objectivity Standards

In its Response, NIST blithely states that the "isolated core model was used by NIST to inform its global analysis by analyzing this particular building subsystem" and the fact that the severe damage cases would not converge on a solution did not present any problem for NIST's analysis. Requesters again submit that NIST's use of the base case damage scenario for the isolated core models, which in turn "informed" its global models, is a clear violation of the DQA, NIST IQS and OMB Guidelines. First, the fact that the more severe damage cases would not converge is clear evidence that NIST was biased towards finding that the most possible damage to the core columns occurred because the damage estimates were set too high. Second, Figure 9-3 indicates that the base damage case was "pruned" from the analysis, yet the Response readily admits that the base damage cases were used to "inform" the global analysis. Requesters respectfully request that these two positions be reconciled with an appropriate revision to the WTC Report, and a clear explanation for NIST's justification for "pruning" a damage estimate which still "informed" its global analysis.

In the Response, NIST treats Requesters' second request for correction with even less analysis or explanation. The specific point made by Requesters, namely that "[n]o columns buckled in either Case C or Case D" for WTC2, was not even addressed by NIST in the Response. (*See* NCSTAR 1-6 p.192) Instead, NIST provides nothing but conclusory statements that merely repeat the incorrect statements contained in the WTC Report. Requesters hereby request and demand that NIST explain how "significant core weakening" was "**necessary** to initiate building collapse" in light of the WTC Report's finding that "[n]o columns buckled in either Case C or Case D" for WTC2. (*See* NCSTAR 1-6 p.322) A reconciliation of these statements is necessary to bring the WTC Report in line with the strictures of the DQA, NIST IQS and OMB Guidelines as they relate to objectivity and utility.

Because none of the points raised by Requesters in Section V.C. of the original Request have been adequately addressed by NIST, Requesters hereby request reconsideration of and a more detailed response to the same.

D. Floor Sagging

In the original Request, the Requesters demonstrated that the results of NIST's physical tests of floor assemblies were vastly different than the computer models ultimately relied upon by NIST in its analysis. In the Response, NIST states "it is not possible to compare the floor sagging observed during the ASTM E119 tests with the floor sagging calculated by the analysis models. The ASTM E119 furnace profile is not representative of real fire condition. In addition the specimens had been fireproofed which prevented the steel from heating as quickly as it would in an unprotected condition as was modeled based on the estimated damage to the fireproofing due to debris impact. Finally, deflection of the floor assemblies undergoing the ASTM E119 testing was limited to prevent damage to the instrumentation. Visual data of the WTC Towers confirmed significant floor sagging at several locations in the towers."

The biggest problem with NIST's response to this point can be summarized as follows: Why did NIST perform the floor tests if the results were, by design, not going to be used in the subsequent analyses? Why did NIST officials pay Underwriters Laboratories (UL) approximately $250,000 of the American public's tax dollars to perform these tests? Will UL or NIST be refunding this money to the taxpayers since the factors NIST claims make these results unusable were knowable beforehand? NIST must justify its performance of these physical tests in some meaningful way in order to satisfy the DQA, NIST IQS and OMB Guidelines. In the alternative, NIST may admit that the real reason it did not want to use these results is that they did not support NIST's predetermined conclusions.

Moreover, NIST's May 2003 progress report on the WTC Report paints a somewhat different picture around these physical tests: "NIST intends to carry out testing to assess the fire rating and behavior of a typical fireproofed floor assembly under the fire conditions prescribed in ASTM E 119. In addition, information contained in this report (e.g., on fireproofing material and thickness, and fire rating) will be used in conducting the ASTM E 119 tests and to analyze thermal-structural response of the WTC towers." Apparently sometime between May 2003 and the time the final WTC Report was issued, NIST decided it would not use the ASTM E119 "to analyze the thermal-structural response of the WTC Towers." Why was this decision made? Why was the American public made to wait for these physical test results from UL if they would never actually be used "to analyze thermal structural response of the WTC towers"? On the other hand, if NIST did use the results of these physical tests in some meaningful way, this fact should be detailed in the report.

Even more important, though, is the fact that there are several reasons why the results of these physical tests actually are informative and should have been used by NIST to determine whether the Towers would have collapsed by fire alone. First, the floor assembly test specimens were not representative of the actual WTC floor conditions not because they had too much fireproofing, but because they had too little. The test performed by UL included four test specimens with "as built" fireproofing thickness of 0.75 inches on two specimens and further limited "as specified" fireproofing thickness of 0.5 inches on the others. No test specimen had fireproofing to represent the "as impacted" condition of 3.25 inches, reported in NCSTAR 1-6A, figure A-60, p 241.

Second, one specimen used in the physical tests had virtually no fireproofing applied. Specimen number 4 had no fireproofing applied to either the underside of the metal deck, or the bridging trusses. (*See* NCSTAR 1-6, p. 41, NCSTAR 1-6B p. 4) Therefore NIST cannot argue that the ASTM E119 tests were meant to show how important the fire proofing was in preventing building collapse. The fact that fireproofed floor specimens survived the ASTM E119 tests does not imply that unfireproofed floor specimens would not have survived similar tests. Physical tests should have been run that approximated the conditions NIST thought applied to the floors during the actual fire.

Third, NIST was not able to demonstrate or explain an intelligible mechanism for "estimated damage to the fireproofing due to debris impact." Ultimately, NIST made a general assumption about fireproofing loss that either was not based on scientific results, or for which the logic was not explained.

Fourth, the ASTM E119 furnace profile is not representative of the real WTC fire condition because it involves longer and more severe fire times, not because it is less severe. In NCSTAR 1-6 (pp. 322, 338) it is indicated that the fires took 55 to 60 minutes to reach the south wall of WTC 1, leaving only about 45 minutes of fire time in the failure zone. This fire time is much shorter than the fire times utilized in the ASTM E119 tests, and even test specimen 4, with nearly no fireproofing applied, met all test requirements for 58 minutes.

Fifth, the visual data, which NIST used to confirm their assumption of floor sagging, is not valid for that purpose. NCSTAR 1-6, p 312, shows an example of the visual data NIST claims in support of floor sagging. If these photographs do, in fact, show floor sagging, they simultaneously repudiate the idea of floor sagging as a mechanism for pulling exterior columns inward, which is the main aspect of NIST's collapse initiation scenario. To pull these columns inward, the sagging must curve inward, along the length of the floor panels, and the floor panels must remain connected to the exterior walls. However, the photos indicated show what would be sagging along the face of the building, requiring coordinated disconnection of the floors from the exterior wall panels, resulting in a highly unlikely continuous curve of sagging across many independent floor panels and connections. Such along-the-face sagging would not provide an inward pull force to the exterior columns.

For these reasons, the Requesters request reconsideration of all of the analysis and requests made in Section V.D. of the original Request, and consideration of the points made above. The Requesters further request that NIST not respond with more cursory argument and analysis, and that NIST actually address in detail the points raised by Requesters. The DQA and related guidelines require NIST to disseminate accurate, reliable, useful information, and in light of the foregoing, it has done no such thing with regards to the WTC Report.

E. The WTC Steel Temperature

In the original Request, the Requesters challenged NIST's computer model steel temperatures of 700°C and higher in light of the WTC Report's statement that NIST's physical tests on the recovered steel samples "show ***no evidence*** of exposure to temperatures above 600°C for any significant time," and "***limited exposure if any above 250°C***" (*See* NCSTAR 1-3, p. xli) (emphasis added). In the Response, NIST suggests that the steel samples saved were intended only for "determining the quality of the steel and, in combination with published literature, for determining mechanical properties as input to models of building performance."

However, in NIST's Progress Report of May, 2003 (p. 30), the analysis of recovered steel was explained as a much more involved process, and the goals of the intended analyses were much broader:

> NIST has catalogued 235 pieces of World Trade Center steel as of March 28, 2003. This includes a database with photographic records and member markings. These pieces represent a small fraction of the enormous amount of steel examined at the various salvage yards where the steel was sent as the WTC site was cleared. In addition, NIST has examined additional steel stored by the Port Authority at JFK airport and has transported 12 specimens to NIST. **NIST believes that this collection of steel from the WTC towers is adequate for purposes of the investigation.**
>
> The NIST analysis of recovered WTC steel includes:
>
> - collection and cataloging of the structural steel;
> - documenting failure mechanisms and damage based on visual observations;
> - determining the metallurgical and mechanical properties of steel, weldments, and connections for use in analyzing baseline structural performance, aircraft impact damage, and thermal-structural response to the fires until collapse initiation;
> - ***estimating the maximum temperature reached by available steel***; and
> - comparing measured steel properties with applicable material specifications.
>
> The steel in NIST's possession includes 28 perimeter column panels for which locations have been identified in the towers, several from the impact zones; and 11 core columns for which locations have been identified in the towers, including two from the impact zones."
>
> NIST also has samples of core columns (wide flange and built-up box columns) of two grades of steel. Ninety-nine percent of the core columns were fabricated from these two grades of steel.

These statements from the May 2003 progress report were reaffirmed in the December 2003 progress report. (*See* NIST Special Publication 1000-4, available at http://wtc.nist.gov/media/PublicUpdateFinal.pdf). Therein, NIST states that it "has in its possession about 236 pieces of WTC Steel". (*See id* at p.8) Additionally, "[r]egions of impact and fire damage were emphasized in the selection of steel for the Investigation." (*Id*.) "NIST has samples of all 14 grades of steel used in the exterior column-spandrel panels. It also has samples of two grades of steel used for the core columns (wide flange and built-up box columns) that represent steel used to fabricate 99 percent of the core columns. Most importantly, "**NIST believes that this collection of steel from the WTC**

Towers is adequate for purposes of the Investigation," which included estimating the maximum temperature reached by the steel. (*See id.*) (emphasis in original).

From these progress reports by NIST, as well as other facts, the Requesters can understand the following:

1. Although the steel samples saved for testing were of limited quantity, an "enormous amount" of the WTC steel was examined either for or by NIST, and the samples selected were chosen for their identified importance in the investigation.

2. Contrary to NIST's current statement, "estimating the maximum temperature reached by available steel" was stated to be a primary objective of the investigation of the recovered steel samples. This stated objective was repeated in NIST's December 2003 progress report.

3. Contrary to NIST's current statement, "documenting failure mechanisms and damage based on visual observations" was a primary objective of the investigation. This stated objective was repeated in NIST's December 2003 progress report.

4. When this sifting and sorting of steel originally occurred, NIST believed "that this collection of steel from the WTC towers [was] adequate for purposes of the investigation."

5. In NIST's December 2003 progress report (p. 8), it was stated that "Regions of impact and fire damage were emphasized in the selection of steel for the Investigation." This means that in December 2003 it appears that NIST believed it had adequate samples of steel available to perform physical tests and "estimat[e] the maximum temperature reached by available steel."

Furthermore, the Response also states that "While NIST did not find evidence that any of the recovered core columns experienced temperatures in excess of 250 °C, it is not possible to extrapolate from such a small sample size to state that none of the core columns on the fire affected floors reached temperatures in excess of 250 °C."

NIST's response here is not satisfactory for the following reasons:

1. It is clear, from NIST's earlier progress reports, that the steel samples used in the steel temperature analyses were taken from a much larger sample, and represented those areas of the buildings which had experienced significant fire and damage.

2. NIST has not shown any evidence that the steel available to the investigation team was of a "small sample size". In fact, the 11 core column samples saved could be reasonably seen as representing as much as 23% of the total (47) core columns. Without a detailed explanation from NIST as to how the samples were saved from

the larger amount examined, and how the calculation of 1% was performed, the public cannot validate NIST's new claim that the samples were insufficient to accomplish the original stated objectives, including the maximum steel temperature determination.

3. As with NIST's new statements about the floor tests, noted above, the Requesters must now ask – Why did NIST perform the steel temperature tests, including the paint deformation test and the tests of steel microstructure, if the results would not be used in the final analyses? Will the American public be refunded the money spent on these tests?

4. The paint deformation test that NIST performed, and that resulted in the 250 °C value discussed, appears to be a measure of the surface temperature of the steel samples tested. NIST provides no explanation for how such a surface temperature result could have been extrapolated to provide meaningful data about the temperature of large masses of core columns, floor assemblies and exterior columns in the WTC towers. In order to validate NIST's new claim that the test results cannot be extrapolated to provide meaningful information, the details of the intended extrapolation protocol must be provided for public use. Indeed, it is difficult to imagine how a surface temperature of 250°C could be extrapolated in such a way that the inner temperature of the steel could ever have been greater than 250°C.

5. In November of 2004, one of the Requesters sent a letter to Dr. Frank Gayle of NIST, asking for information on the steel temperature tests performed, and the conclusions drawn from the results of those tests. This letter was never answered, but the October 2004 NIST WTC presentation, on which the letter was based, repeatedly stated that large quantities of the steel in the towers had "softened". After receiving this letter, NIST delayed their report and removed the word "softened" from throughout their descriptions of the collapse initiation sequences. These facts indicate that NIST did not have any plan for extrapolating the results of steel temperature tests, and have never had a scientific basis for the claims made in the NIST WTC report about steel temperatures.

Finally, at the time of "collapse initiation" in the WTC Report, even NIST's own computer models challenge its collapse theory. In the Response is the statement "... the analytical models of the fire growth and spread are consistent with the observable data for the WTC towers." Similarly in the WTC Report, after fire tests had been conducted and after comparing the results with modeling we read: "The quality of the simulations was deemed satisfactory." (page xlii) Inspection of the temperature charts in NIST NCSTAR 1-5 (p. 112-127) reveals that, for WTC 1, the core areas of stories 92 to 99 (which spans the plane impact area and within which is the presumed collapse initiation region) had cooled down substantially prior to collapse. The core area was hottest at the 30- and 45-minute readings, yet collapse did not occur until 102 minutes had elapsed, by which time the environment of the core had dropped to be mainly in the range 100°C to 600°C. Roughly half the area is shown in shades of blue, indicating temperatures no higher than

150°C. If the temperature of the columns was still rising at the time of collapse, the column temperature would have been no higher than the environment temperature and the steel would obviously be far too strong to collapse. If the temperature of the columns was falling at the time of collapse, the columns had already survived the period when the steel was hottest. In this case, given that steel regains strength as it cools, it is clear that core collapse due to heat had become impossible.

The charts depicting the temperature of the columns (p. 144-157) confirm that the steel had become too cold to collapse. The highest core column temperatures are shown for stories 95, 96 and 97. On these floors the highest column temperatures were achieved at about 50 minutes and cooling occurred thereafter. We also see the perimeter columns were cool at collapse: most of the perimeter and core columns are depicted in blue and green, indicating temperatures ranging from 150°C to 350°C. At these temperatures the column steel would have from about 80% to 90% of its normal yield strength, according to the NIST chart (NIST NCSTAR 1-3, P. 111). At this strength, given the built in safety factor, approximately every second column could be removed and the tower would still stand. The hat truss and most of the perimeter, including four corners, were intact, forming a rigid structure, which would prevent the core from leaning, thus all core columns would have to give way simultaneously for collapse to occur. Clearly some additional factor was necessary to bring about collapse.

For all of the foregoing reasons, the Requesters hereby request reconsideration of the analysis and requests made in Section V.E. of the original Request. NIST has not adequately explained why it believes its physical steel temperature tests are essentially irrelevant. Again, why go to the trouble of physically testing the steel temperature if the results would not ultimately be used in the WTC Report's analysis? It is abundantly clear that NIST must reconcile the results of its physical tests with its computer models if it hopes to comply with the DQA and related guidelines with regards to objectivity and especially utility.

F. The Goal of the WTC Report and Its Overall Analysis

In the original Request, the Requesters questioned NIST's decision to halt its analysis at the point it calls "collapse initiation." NIST's response to this valid point is the clearest demonstration yet of the utter bankruptcy of the WTC Report. Specifically, in the Response NIST claimed that it was not required to analyze the entire collapse of the Twin Towers because "Once the collapse initiated, it is clear from the available evidence that the building was unable to resist the falling mass of the upper stories of the towers." However, following this logic to its ultimate conclusion, NIST's detailed analysis of collapse initiation was completely unnecessary because it is also clear from the available evidence that collapse initiated. The relevant question in both cases is: Why? NIST is required under the NCST Act, and under general moral principles as the official investigatory body, to provide a coherent, scientific explanation of why collapse initiated, and why the lower structure provided so little resistance to the collapse. Instead, NIST provided the American public a 10,000-page report analyzing collapse initiation, and then stops there because the available visual evidence allegedly shows us

everything we need to know about what happened after collapse initiation. That position is completely untenable and NIST should abandon it immediately if it hopes to salvage any shred of credibility.

As noted in the original Request, NIST was under a mandate by the NCST Act to "establish the likely technical cause or causes of the building failure." *See* 15 U.S.C. § 7301(b)(2)(A). Accordingly, one of the specific goals stated in the WTC Report was to "Determine why and how WTC 1 and WTC 2 collapsed following the initial impacts of the aircraft." (NCSTAR 1, p. xxxv) Confusingly, in the Response, NIST states that "it did not analyze the collapse of the towers," and that it is "unable to provide a full explanation of the total collapse." There could not be any clearer evidence that NIST has failed to live up to its duties under the NCST Act, and failed to satisfy its stated goal of determining "why and how" the buildings collapsed. NIST admits that it didn't even try to analyze the collapse of the towers, and that it is "unable" to explain the total collapses to the American people.

NIST also claims that its report is useful because "codes and standards organizations have already begun taking action to adopt changes to building and fire codes and standards that respond directly to the NIST recommendations." However, a review of the information available at http://wtc.nist.gov/recommendations/recommendations.htm reveals that most of the proposed building codes have in fact been rejected by the standards community. The fact that NIST has been able to ram through a handful of code changes reflects more on the influence its name carries than on the utility of its report. More importantly, NIST's building code recommendations are actually harmful to the building community because they are based on extremely flawed science, as amply demonstrated in the original Request and this appeal letter. Unnecessarily onerous building codes inhibit growth because they make projects needlessly more expensive. NIST should withdraw all of its recommended building codes until it can produce a report that is not fundamentally flawed in so many respects.

The Requesters also cited numerous testimonies from firefighters and other first responders that indicate the presence of explosions during the building collapses. NIST writes off this testimony with the conclusory allegation that "taken as a whole" the firefighter interviews did not indicate that explosives played a role in the collapses. The Requesters wonder how many firefighters reporting explosions it would have taken for NIST to seriously consider the explosive demolition hypothesis for the collapses.

NIST has also refused to test for the presence of explosive residue because "such tests would not necessarily have been conclusive." However, as discussed in detail in the Request and in this document, NIST conducted many tests that were "not necessarily conclusive." Examples of such allegedly inconclusive tests are the physical steel temperature tests and the physical fire resistance tests. Clearly NIST thought these physical temperature and fire resistance tests, at the very least, ***might have been*** instructive on some aspect of the collapses. Why then would NIST not conduct a very simple lab test for the presence of explosive residue, even assuming the test would not

necessarily have been conclusive? More importantly, though, it is difficult to imagine a scenario in which a test for explosive residues would not be conclusive. If explosive residues are found in WTC debris, there is an extremely high likelihood that explosives were in fact used. Consider that Materials Engineering, Inc. has this to say about its thermite residue tests:

> When thermite reaction compounds are used to ignite a fire, they produce a characteristic burn pattern, and leave behind evidence. These compounds are rather unique in their chemical composition, containing common elements such as copper, iron, calcium, silicon and aluminum, but also contain more unusual elements, such as vanadium, titanium, tin, fluorine and manganese. While some of these elements are consumed in the fire, many are also left behind in the residue. ...
>
> MEi has conducted Energy Dispersive Spectroscopy (EDS) on minute traces of residue, identifying the presence of these chemical elements. **The results, coupled with visual evidence at the scene, provide *absolute certainty* that thermite reaction compounds were present, indicating the fire was deliberately set, and not of natural causes.**

(*See* http://www.materials-engr.com/ns96.html) (emphasis added)

Unless NIST can explain a plausible scenario that would produce inconclusive explosive residue test results, its stated reason for not conducting such tests is wholly unpersuasive.

Moreover, NIST must reconcile its statement that it found "no corroborating evidence to suggest that explosives were used" with its statement that it did not test for explosive residue which, if found, would suggest explosives were used. This point was clearly made in the original Request, but was ignored in NIST's Response. The fact therefore remains that it is extremely easy to "find no evidence" when one is not looking for evidence.

Additionally, NIST must detail the initial evidence that would suggest that explosives were used which it believes needs "corroborating" before an explosive demolition hypothesis will be considered. If NIST meant to say it found "no evidence to suggest that explosives were used" then it must revise its report accordingly. Stating that NIST found "no corroborating evidence" suggests or implies that there exists a body of initial evidence that needs further "corroboration." NIST must detail this existing body of evidence that needs further corroboration in order to comply with the DQA and related guidelines.

Therefore, the Requesters request and demand that NIST provide the Requesters and the American public with an adequate explanation, as they deserve, of the total and complete destruction of the WTC Towers. This is the only way NIST can ever hope to comply with the DQA, NIST IQS and OMB Guidelines. By stopping short, at the point

of collapse initiation, NIST has shirked its duty under the NCST Act of establishing the likely technical cause or causes of collapse. The explanation would necessarily involve a detailed examination of why and how the lower structure "was unable to resist the falling mass of the upper stories of the towers." Such an explanation is required under the DQA and related guidelines.

G. Conclusion

Please contact the undersigned should you have any questions or concerns. We look forward to receiving a substantive response to our appeal, wherein NIST straightforwardly and completely addresses the serious scientific concerns raised in our Request and this Appeal.

Very truly yours,

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