



UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-0001

Ted Walter
Director of Strategy and Development
Architects & Engineers for 9/11 Truth
(510) 292-4710

Dear Mr. Walter:

This letter is in response to your April 15, 2020 request for correction of certain information contained in the NIST World Trade Center (WTC) Building 7 Investigation report, submitted under the Data Quality Act, Section 515 of Public law 106-554; the Office of Management and Budget's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies (67 FR 8451, Feb. 22, 2002) ("OMB Guidelines"); and NIST's Guidelines, Information Quality Standards, and Administrative Mechanism ("NIST IQS").

The information that is the subject of this Request is:

- NIST's Final Report on the Collapse of the World Trade Center Building 7 (NCSTAR 1A) and NIST's Fire Response and Probable Collapse Sequence of World Trade Center Building 7 (NCSTAR 1-9), collectively referred to herein as the "NIST WTC 7 Report."
- NIST's webpage titled FAQs – NIST WTC 7 Investigation (referred to herein as the "NIST WTC 7 FAQs").

The letter dated April 15, 2020 states that the NIST WTC 7 Report and the NIST WTC 7 FAQs contain information that violates the DQA, the OMB Guidelines, and the NIST IQS. The information is identified in the letter as follows:

Part 1: NIST's Computer Simulations

- A. Column 79 Side Plate (page 8)
- B. Thermal Expansion of Beam K3004 (page 15)
- C. Girder A2001 Web Stiffeners (page 18)
- D. Reported Cascade of Floor Failures (page 22)
- E. NIST's Global Collapse Analyses (page 26)

Part 2: NIST's Omission and Distortion of Evidence of Explosions and Incendiaries

- F. Seismogram Data (page 49)
- G. Eyewitness and Audio Evidence of Explosions (page 55)
- H. Severely Eroded Steel from WTC 7 (page 80)

As noted in NIST NCSTAR 1A, NIST conducted its WTC Investigation in accordance with the OMB Guidelines and NIST IQS. This ensured that NIST's findings were objective, had utility to the industry, to emergency response professionals and to the general public, and insured the integrity of the information collected and presented in NIST's reports. Further detail about NIST's compliance with both the OMB Guidelines and NIST IQS can be found on pages xxx – xxxi of NIST NCSTAR 1A.

NIST has objectively investigated and analyzed the relevant material. Based on this analysis, NIST has determined that the disseminated information complies with all applicable published information quality guidelines. Therefore, the request for correction is denied. The basis for this denial is explained in detail below.



A. Column 79 Side Plate (page 8)

Your letter asserts that “NIST’s 16-Story ANSYS Model Ignored the Effect that Column 79’s Side Plate Would Have Had in Preventing the Walk-Off of Girder A2001, Thus Violating the OMB Guidelines and NIST IQS” and requests the following corrections:

- (1) Revise the NIST WTC 7 Report to Reflect that the Column 79 Side Plate Would Have Prevented Girder A2001 from Moving Westward Enough to Walk Off Its Support at Column 79
- (2) Discard the Probable Collapse Sequence and Develop a New Probable Collapse Sequence that Is Physically Possible

NIST disagrees that the 16-story ANSYS model ignored the effect that Column 79’s side plate would have on the walk-off of Girder A2001. The full-scale model has detailed connection models that are consistent with the fabrication shop drawings, as shown in Figures 8-21 and 11-15 of the WTC 7 report. The Girder A2001 and Column 79 connection locates the bolts on a seated connection attached to the exterior edges of the Column 79 side plates, with the girder axis at a slight angle to Column 79.

The 16-story model was based on architectural and structural drawings of the original building and subsequent building alterations, as well as erection and shop fabrication drawings (NCSTAR 1A, page 36), to ensure that the information used to develop the model was accurate, reliable, and unbiased. The model development was further informed by preliminary analyses of structural behavior, with consideration of loads, thermal effects, contact between elements, and potential failure modes. The 16-story model development complies with the OMB Guidelines and NIST IQS. Therefore, your request for correction to revise the NIST WTC 7 report with regards to the Column 79 and Girder A2001 connection and to develop a new Probable Collapse Sequence for WTC 7 is denied.

B. Thermal Expansion of Beam K3004 (page 15)

Your letter asserts that “NIST Ignored the Limit of How Far Beam K3004 Could Thermally Expand and Its Resulting Inability to Cause the Walk-Off of Girder A2001, Thus Violating the OMB Guidelines and NIST IQS” and requests the following corrections:

- (1) Revise the NIST WTC 7 Report to Reflect that Beam K3004 Could Not Thermally Expand Enough to Cause the Walk-Off of Girder A2001
- (2) Discard the Probable Collapse Sequence and Develop a New Probable Collapse Sequence that Is Physically Possible

NIST disagrees that NIST ignored the limit of how far Beam K3004 could thermally expand or its contribution to the walk-off of Girder A2001. The full-scale 16-story ANSYS model was based on architectural and structural drawings of the original building and subsequent building alterations, as well as erection and shop fabrication drawings (NCSTAR 1A, page 36), with detailed connection models between structural steel members and concrete floor slabs (NCSTAR 1-9, Section 11.2.5) and thermal data from simulations of the fire growth and spread in WTC 7 (NCSTAR 1-9, Section 9.3 and Section 10.3) that were validated against numerous photograph and video records (NCSTAR 1-9, Section 5.6 and Section 9.5).

The 16-story model was developed so that all floor beams and girders could fully respond to the loads and temperature effects, including thermal expansion, deflections, and failure modes within the load paths of the structural system (NCSTAR 1-9, Section 11.2). As the northeast floor beams thermally expanded, all the floor beams had connections to the Girder and expanded against Girder A2001 until the connection at Col 79 failed, as shown in Figure 11-48.

The 16-story ANSYS model was based on architectural and structural drawings of the original building and subsequent building alterations, as well as erection and shop fabrication drawings (NCSTAR 1A, page 36), to ensure that the information used to develop the model was accurate, reliable, and unbiased. The model development was further informed by preliminary analyses of structural behavior, with consideration of loads, thermal effects, contact between elements, and potential failure modes (NCSTAR 1A, Section 8.8). The 16-story model development complies with the OMB Guidelines and NIST IQS. Therefore, your request for correction to revise the NIST WTC 7 report to reflect that Beam K3004 could not thermally expand enough to cause the walk-off of Girder A2001 and to develop a new Probable Collapse Sequence for WTC 7 is denied.

C. Girder A2001 Web Stiffeners (page 18)

Your letter asserts that “NIST Omitted the Presence of Web Stiffeners on Girder A2001 That Would Have Prevented the Flange Failure and Walk-Off of Girder A2001, Thus Violating the OMB Guidelines and NIST IQS” and requests the following corrections:

- (1) Perform New Analyses that Includes the Web Stiffeners on Girder A2001 and Revise the NIST WTC 7 Report to Reflect that Girder A2001 Would Not Have Walked Off Its Support at Column 79
- (2) Discard the Probable Collapse Sequence and Develop a New Probable Collapse Sequence that Is Physically Possible

NIST disagrees that the presence of web stiffeners on Girder A2001 was needed in the 16-story model to prevent flange failure and walk-off of Girder A2001. The preliminary analysis of the northeast corner floor system in Chapter 8 of the WTC 7 report used a modeling approach (shell elements) that could simulate a range of failure modes, including local deformations or buckling/crippling of steel beam flange and web elements. The partial height web stiffener for Girder A2001 in Frankel shop drawing #9114 was not included in the preliminary analyses. Web stiffeners increase the buckling resistance of the web element, such as when a floor area is subject to its full design live load. However, as the building had been evacuated, the floor live loads were minimal. A conservative approach was to evaluate Girder A2001 for the potential occurrence of deformation and buckling failure modes without the web stiffener in the preliminary analyses (NCSTAR 1-9 Section 8.8). Even though the applied floor load and temperatures in the preliminary analyses (NCSTAR 1-9 Section 8.8) exceeded those in the 16-story ANSYS model (NCSTAR 1-9 Section 11.2) by a factor of 2 or more, Girder A2001 did not experience any deformation of its web or flange elements at the seated connection to Column 79 in the absence of the web stiffeners. Therefore, the web stiffener was not needed to prevent web or flange buckling or bending in the 16-story ANSYS model.

The 16-story model was based on architectural and structural drawings of the original building and subsequent building alterations, as well as erection and shop fabrication drawings (NCSTAR 1A, page 36), to ensure that the information used to develop the model was accurate, reliable, and unbiased. The model development was further informed by preliminary analyses of structural behavior, with consideration of loads, thermal effects, contact between elements, and potential failure modes (NCSTAR 1A, Section 8.8). The 16-story model development complies with the OMB Guidelines and NIST IQS. Therefore, your request for correction to revise the NIST WTC 7 report to perform new analyses that include web stiffeners on Girder A2001 and to develop a new Probable Collapse Sequence for WTC 7 is denied.

D. Reported Cascade of Floor Failures (page 22)

Your letter asserts that “NIST Erroneously Concluded that the Impact Load of Floor 13 Falling onto Floor 12 Would Be Sufficient to Cause Floor 12 to Fail and Initiate a Cascade of Floor Failures Down to Floor 5, Thus Violating OMB Guidelines and NIST IQS”

and requests the following corrections:

- (1) Revise the NIST WTC 7 Report to Include Calculations that Demonstrate that the Impact Load of Floor 13 Falling onto Floor 12 Would Be Insufficient to Cause Floor 12 to Fail
- (2) Discard the Probable Collapse Sequence and Develop a New Probable Collapse Sequence that Is Physically Possible

NIST disagrees that the analyses of the WTC 7 collapse erroneously concluded that the impact load of Floor 13 onto Floor 12 was sufficient to initiate a cascade of floor failures to Floor 5. The WTC 7 report has considered the proposed hypothesis.

The LS-DYNA model included the ability to simulate nonlinear responses, falling debris, and dynamic impact effects on other structural members (NCSTAR 1A, page 38). Initial conditions for the LS-DYNA model were obtained from the 16-story ANSYS model for damage to steel beams and girders and connections, steel and concrete temperatures, and the redistribution of structural member loads following failures.

LS-DYNA simulations were conducted to examine the sensitivity of the collapse initiation and progression results to the initial state of fire-induced damage (NCSTAR 1A, page 38). The simulations showed that the structural damage at 4 h from the multiple floor fires was the primary cause of the collapse and that debris damage from WTC 1 contributed to the rate of the collapse progression. The simulation with lesser structural damage at 3.5 h had several girders in Floors 12 to 14 that were connected to Columns 79, 80, and 81, and fell to the floors below. However, the damage was not sufficient to initiate a global collapse (NCSTAR 1-9, page 603-604).

The LS-DYNA model was based on architectural and structural drawings of the original building and subsequent building alterations, as well as erection and shop fabrication drawings (NCSTAR 1A, page 38), to ensure that the information used to develop the model was accurate, reliable, and unbiased. The model development was further informed by other analyses of structural behavior, with consideration of loads, thermal effects, contact between elements, and potential failure modes (NCSTAR 1A, page 38). Several analyses were conducted to determine the sensitivity of the global collapse initiation to the impact of falling floors relative to the damage sustained from the fires (NCSTAR 1-9, Section 12.4). The LS-DYNA model development and analyses for determining the Probable Collapse Sequence for WTC 7 complies with the OMB Guidelines and NIST IQS.

Therefore, your request for correction to revise the NIST WTC 7 report to include calculations that demonstrate that the impact load of Floor 13 falling onto Floor 12 would not initiate a cascade of floor failures and to develop a new Probable Collapse Sequence for WTC 7 is denied.

E. NIST's Global Collapse Analyses (page 26)

Your letter asserts that "Contrary to NIST's Assertion, NIST's Global Collapse Analyses Do Not Match the Observed Behavior Reasonably Well and Do Not Confirm NIST's Leading Collapse Hypothesis, Thus Violating OMB Guidelines and NIST IQS" and requests the following corrections:

- (1) Revise the NIST WTC 7 Report to Reflect that the North Face Roofline Underwent a Sudden Transition to Free Fall
- (2) Perform a New Global Collapse Analysis that Both Is Physically Possible (i.e., Does Not Involve the Walk-Off of Girder A2001 at Its Column 79 Support Nor a Cascade of Floor Failures from Floor 13 to Floor 5) and Matches the Observed Behavior Well (e.g., the Scenario Simulated in the UAF Analysis)

NIST disagrees that NIST's global collapse analyses do not match the observed behavior reasonably well and do not confirm NIST's Leading Collapse Hypothesis. The critical observations and corresponding failures identified from the structural analysis include: (1) east-west motion of the building beginning at approximately the same time as failure of floors 6 through 14 around Column 79; (2) the formation of the "kink" in the roofline of the east penthouse approximately one second after Column 79 was found to buckle; (3) window breakage on the east side of the north face as the buckling of Column 79 precipitated the failure of upper floors; and (4) the beginning of global collapse (vertical drop of the building exterior) within approximately one-half second of the time predicted by analysis.

The measured time and analytically predicted time from the start of failures of floors surrounding Column 79 to the initial downward motion of the north face roofline was 12.9 seconds (see NIST NCSTAR Report 1A, Table 3-1). The collapse observations from video analysis of the CBS News Archive video are included in NIST NCSTAR Report 1A Section 3.5 and NIST NCSTAR Report 1-9, Section 8.3.

The NIST analysis and animation of the upper exterior wall deformations differ from the video images only in the later stages of the animation, and only after the initiation of global collapse.

Uncertainties associated with the NIST approach are addressed in NIST NCSTAR Report 1A, Section 3.5, where it is noted, "Once simulation of the global collapse of WTC 7 was underway, there was a great increase in the uncertainty in the progression of the collapse sequence, due to the random nature of the interaction, break up, disintegration, and falling debris." The contributions due to stiffness and strength of nonstructural materials and components, such as exterior cladding, interior walls and partitions, were not considered in the analyses conducted by NIST. It is well known that such non-structural components can increase the stiffness and strength of a structural system, but their contributions are difficult to quantify. Given these factors, disparities between the video and the animation in the later stages of collapse would be expected.

The global collapse analysis and Probable Collapse Hypothesis are based on a series of models and analyses informed by shop fabrication drawings to ensure that the information used to develop the model was accurate, reliable, and unbiased. The model development was further informed by other analyses of structural behavior, with consideration loads, thermal effects, contact between elements, and potential failure modes. Several analyses were conducted to determine the sensitivity of the global collapse initiation to the impact of falling floors relative to the damage sustained from the fires. The results of these analysis were compared to observed data from photographs and video records, where the simulations with and without WTC 1 damage bracketed the event times. Further consideration was given to the quality of the analysis results as the collapse progressed and an accuracy appraisal is included in Section 3.5.3 of the WTC 7 report. The methods, data, and information used for determining the Probable Collapse Sequence for WTC 7 complies with the OMB Guidelines and NIST IQS.

Therefore, your request for correction to revise the NIST WTC 7 report to reflect that the north face roofline underwent a sudden transition to freefall and to perform a new global collapse analysis that matches the observed data well is denied.

F. Seismogram Data (page 49)

Your letter asserts that:

- (1) NIST's claim that the two seismic signals were created by a cascade of floor failures and the initiation of global collapse, respectively, fails to comply with the OMB Guidelines and NIST IQS because it lacks objectivity; and
- (2) NIST's claim is inaccurate, unreliable, and biased because it contradicts the straightforward and indisputable interpretation of the seismogram data indicating that the seismic signals were created by explosions

Further, your letter requests the following corrections:

- (3) Revise the NIST WTC 7 Report to Reflect that Subaerial Explosions, as Opposed to the Alleged Cascade of Floor Failures and the Initiation of Global Collapse, Were the Actual Source of the Seismic Signals Generated During the Collapse of WTC 7
- (4) Discard the Probable Collapse Sequence and Develop a New Probable Collapse Sequence that Is Consistent with the Occurrence of a Subaerial Explosion at the Onset of the East Penthouse Collapse and a Subaerial Explosion at the Onset of Global Collapse

NIST disagrees that the analysis of seismic signals in WTC 7 report, in particular two seismic signals associated with the cascade of floor failures and the initiation of global collapse, fail to comply with the OMB Guidelines or NIST IQS. As referenced in the WTC 7 report, the seismic signals for the WTC 7 event were recorded and evaluated by Lamont-Doherty Earth Observatory (LDEO) for accuracy and reliability. NCSTAR 1-9, Appendix B lists criteria for characterizing seismic signals recorded from the WTC site, provides uncertainty bounds on WTC event times based on the seismic signals, and clearly indicates the various types of seismic signals (pressure, shear, and Rayleigh waves) from the collapse of WTC 7.

While the report notes that the "qualitative sequence of events is consistent with what might be construed as two arrivals," it acknowledges that "caution is required when interpreting signals that are small." NIST evaluated other seismic events recorded on September 11, 2001, including earthquakes, local quarry blasts, and unidentified weak signals, to distinguish the main events from such signals. In addition to the seismic records provided by LDEO, NIST also considered seismic records from other sources such as photographs, video recordings, and television broadcasts. The seismic records from these additional sources were also evaluated for completeness and included in the analysis of the WTC 7 probable collapse sequence. Further, the seismic signals from these additional records were also evaluated for all possible sources, including subaerial explosions, with consideration of seismic signal characteristics, quality, and associated uncertainties. Accordingly, the use of underlying data for the seismic signals and the methodologies for analysis of the seismic signals complies with the OMB Guidelines and NIST IQS. Therefore, your request to correct the WTC 7 report and to develop a new Probable Collapse Sequence for WTC 7 is denied.

G. Eyewitness and Audio Evidence of Explosions (page 55)

Your letter asserts that:

- (1) NIST Ignored and Distorted Eyewitness Reports and Audio Recordings Indicative of Explosions at the Onset of and During the Collapse of WTC 7, Thus Violating OMB Guidelines and NIST IQS
 - a. NYU medical student named Darrell, interviewed twice on 1010 WINS Radio within minutes after the collapse
 - b. Video clip of MSNBC's Ashleigh Banfield interviewing a Lower Manhattan resident at the onset of WTC 7's collapse
 - c. Other Witness Behavior and Audio Evidence Captured on Video
 - d. NYPD officer Craig Bartmer
- (2) NIST Distorted Eyewitness Reports of an Explosion Occurring Inside WTC 7 on the Morning of 9/11, Thus Violating OMB Guidelines and NIST IQS

Further, your letter requests the following corrections:

- (1) Revise the NIST WTC 7 Report to Reflect that There Are Eyewitness Reports and Audio Recordings Indicative of Explosions at the Onset of and During the Collapse of WTC 7
- (2) Revise Section 6.5.2 of NCSTAR 1-9 to Faithfully Reflect the Account of Barry Jennings, According to Which There Was a Big Explosion Inside WTC 7 Before 10:28 AM that Caused the 6th Floor Landing He and Michael Hess Were Standing on to Give Way
- (3) Discard the Probable Collapse Sequence and Develop a New Probable Collapse Sequence that Is Consistent with the Eyewitness and Audio Evidence of Explosions

NIST disagrees that eyewitness reports and audio recordings indicative of explosions at the onset of and during the collapse of WTC 7 were ignored or distorted. NIST collected numerous photographs, video/audio recordings, news broadcasts, and interviews related to the WTC events on September 11, 2001, and performed concurrent analyses of these records to determine the most likely sequence of events (NCSTAR 1-9, Chapter 5).

NIST conducted several types of independent analyses of video and audio recordings to obtain additional quantitative data and information. For example, NCSTAR 1-9, Section 5.7.5, includes an audio analysis of two audio/video recordings on West Street and one audio/video recording on West Broadway that were approximately 640 m from WTC 7. The analysis found that the recordings did not include voice comments regarding any noise associated with the WTC 7 collapse until the east penthouse started to descend into the interior of WTC 7 building, which began 6.9 s prior to the global collapse. The analysis of the recordings found that the sound level increased during the global collapse but there were no loud, explosive sounds when the collapse began. Further, none of the camera operators, interviewers, or interviewees heard any sound that attracted their attention before the east penthouse started to descend.

NIST disagrees with the assertion that it distorted eyewitness reports of an explosion occurring inside WTC 7. The rescue events documented in NCSTAR 1-9, Section 6.5.2, are based on eight independent interviews. NIST also conducted an independent analysis of hypothetical blast scenarios, as documented in Appendix D. The analysis included examining pressure waves from two simulated blast charges of different sizes inside the building, and corresponding window damage and sound propagation outside of the building. For locations where sound propagation was unobstructed (e.g., down West Street or West Broadway), the analysis shows that the sound level would have been 130 dB to 140 dB at 1 km, which is about twice the distance from the recording locations (approximately 640 m from WTC 7).

NIST has objectively investigated and analyzed numerous photographs, video/audio recordings, news broadcasts, and interviews related to the WTC events on September 11, 2001, and concurrently analyzed recorded and reported events and quantitative analyses of acoustic signals and transmission characteristics to arrive at the conclusions in the WTC 7 report. NIST determination of the probable collapse sequence of WTC 7 complies with OMB Guidelines and NIST IQS for quality. Therefore, your request to revise the WTC 7 based on a re-evaluation of eyewitness accounts and audio records and to develop a new Probable Collapse Sequence for WTC 7 is denied.

H. Severely Eroded Steel from WTC 7 (page 80)

Your letter asserts that:

- (1) Despite the Discovery of “Severe Erosion in Several Beams” from the World Trade Center, NIST Neglected to Perform Tests to Determine the Cause of the Erosion in One Such Beam Recovered from WTC 7, and Then Falsely Stated that No Identifiable Steel Was Recovered from WTC 7, Thus Violating OMB Guidelines and NIST IQA.

Further, your letter requests the following corrections:

- (1) Obtain the WTC 7 Steel Sample from the Worcester Polytechnic Institute and Conduct Analyses to Determine the Cause of the Severe Erosion
- (2) Conduct Further Experiments to Reproduce the Observed Severe Erosion and Determine the Viability of Gypsum Wallboard Hypothesis Versus the Viability of the Thermate/Nano-Thermite Hypothesis
- (3) Revise FAQ #27 in the NIST WTC 7 FAQs to Reflect that Identifiable Steel Was Recovered from WTC 7
- (4) Discard the Probable Collapse Sequence and Develop a New Probable Collapse Sequence that Is Consistent with Physical Evidence of Incendiarities Being Used in the Destruction of WTC 7

NIST disagrees with the assertion that NIST omitted an analysis of the severely eroded WTC 7 steel members from the NIST WTC 7 Report. FAQ #27 provides clear reasons why the steel samples removed from the WTC site before NIST investigation began could not be identified as steel from WTC 7, as described by FEMA Report 403.

Appendix C in the FEMA 403 report on the WTC events of 9/11 provides the analysis of three metal samples and concludes that WTC buildings 4, 5, 6, and 7 had similar grades of steel and member types. The FEMA 403 report explains that only the steel from buildings WTC 1 or 2 could be positively identified after the WTC steel had been moved to four salvage yards. (*See* FEMA 403 Appendix D). The statement in FEMA Appendix C that “the first [sample] appeared to be from WTC 7” is consistent with the FEMA 403 report conclusion regarding positive identification of WTC 1 or 2 steel, but not of WTC 7 steel.

In the absence of a method to confirm that the FEMA 403 Sample 1 that was tested at the Worcester Polytechnic Institute is in fact steel from WTC 7, there is no justifiable basis for conducting further analyses to examine other theories that explains the cause of the erosion in the sample, revise FAQ #27, or modify the Probable Collapse Sequence for WTC 7. The Probable Collapse Sequence is consistent with the data and information collected by NIST and meets OMB Guidelines and NIST IQS for quality. Therefore, your request to further analyze a steel sample from Worcester Polytechnic Institute, revise FAQ #27, and develop a new Probable Collapse Sequence for WTC 7 is denied.

If you are dissatisfied with this decision, you may submit an appeal within 30 calendar days of the date of the initial decision. Such an appeal must be made in writing and addressed to:

Associate Director for Laboratory Programs
National Institute of Standards and Technology
100 Bureau Drive, Mail Stop 1000
Gaithersburg, MD 20899

An appeal of an initial denial must include:

- a. the requester's name, current home or business address, and telephone number or electronic mail address;
- b. a copy of the original request and any correspondence regarding the initial denial; and
- c. a statement of the reasons why the requester believes the initial denial was in error.

Thank you for your interest. If you have questions or concerns, you may contact me at: info.quality@nist.gov.
Please refer to: http://www.nist.gov/director/quality_standards.cfm.

Sincerely,

Catherine Fletcher
Management and Organization Office

cc: H. Harary
J. Chin
A. Dohne
C. Kellerman