

October 1, 2014

Assistant General Counsel for Administration (Office), Room 5898-C U.S. Department of Commerce 14th and Constitution Avenue, N.W. Washington, D.C. 20230

Re: Freedom of Information Act Appeal (FOIA), 5 U.S.C. § 552

To Whom It May Concern:

I am respectfully submitting this FOIA Appeal. Please find enclosed the following requirements and related supplemental information:

- Exhibit A: FOIA request #DOC-NIST-2014-001436 dated 7/21/14
- Exhibit B: Final response letter dated 9/22/14
- Exhibit C: Statement of the reason why the withheld records should be made available
- Exhibit D: Statement of the reason why denial of the records was in error
- Exhibit E: FOIA request letter dated 3/19/12
- Exhibit F: NIST response to Exhibit E dated 6/27/12

It's a shame to get lawyers involved in order to answer a few questions about an official publication¹ containing incomplete information with speculative and potentially erroneous conclusions. It should not take an act of Congress to get honest answers to technical questions regarding this report.

Thank you for your consideration and professional courtesy.

Sincerely,

Ronald H. Brookman, S.E. 3653

¹ Therese P. McAllister et al., NIST NCSTAR 1-9, <u>Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7</u>, Washington: U.S. Government Printing Office, November 2008.

July 21, 2014

Catherine S. Fletcher, FOIA & Privacy Act Officer National Institute of Standards and Technology 100 Bureau Drive, STOP 1710 Gaithersburg, MD 20899-1710

Re: Freedom of Information Act Request, 5 U.S.C. § 552

Dear Ms. Fletcher:

On March 19, 2012 I requested all available public information under the control of NIST regarding ten questions related to the 7 World Trade Center (WTC 7) collapse initiation outlined in Chapters 8 and 11 of NIST NCSTAR 1-9. You forwarded my request to the Engineering Lab for a response, and the request was not assigned a FOIA log number. Most of my questions were never answered.

I recently learned that others with similar questions have received responses from NIST to two or more of the questions that were not answered in June 2012 when the WTC Investigation Team updated the errata file and FAQs for WTC 7. Does this mean new information was found or developed by NIST in the last two years?

The recent responses originated from Michael Newman in the Public and Business Affairs Office² and from Jim Schufreider in the Congressional and Legislative Affairs Office.³ These two responses are neither correct nor germane to the question of flange stiffness and strength—questions 4 and 9 in my letter dated 3/19/12, and they are invalid from the standpoint of a scientific inquiry into the collapse mechanism.

¹ Therese P. McAllister et al., NIST NCSTAR 1-9, <u>Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7</u>, Washington: U.S. Government Printing Office, November 2008.

² Michael Newman, Public Affairs Officer. "The web stiffeners shown at the end of the girder in Frankel drawing #9114 prevent web crippling. The structural analyses of WTC 7 did not show any web crippling failures. Therefore, the web crippling plates did not need to be included in the models/analyses." October 25, 2013.

³ Jim Schufreider, Director, Congressional and Legislative Affairs Office. "NIST detailed structural analysis of the girder in question indicated that web buckling did not occur under the combined effects of gravity loads and fire. Because there was no web buckling of Girder A2001, NIST did not consider the web stiffeners as a factor in the final NIST analyses." July 11, 2014.

The bearing stiffeners shown on Frankel Steel drawing 9114 prevent flange local bending as well as web local yielding, web local crippling, and web sidesway buckling. The lateral walk-off and removal of critical framing members from the ANSYS model was assumed based on the pretense of a girder flange local bending failure;4 the stiffeners were therefore required to be included in the analysis.

I repeat my question and my request.

The ANSYS model for the seated-beam connection at column 79 shown in Figure 11-15⁵ did not account for the presence of bearing stiffeners shown in Frankel Steel drawing 9114. A lateral displacement of 5 ½ inches⁶ or 6 ¼ inches⁷ would not cause a loss of vertical support with the stiffeners in place. NIST assumed that the girder flange would yield in flexure when the girder web moved past the edge of the bearing seat. Why were these stiffeners omitted from the 16-story ANSYS model when they obviously affect the bending stiffness and strength of the girder bottom flange?

I understand that you are not required to create a record that does not exist; I am requesting all available information in NIST's possession related to this question and the decisions that NIST has made in relation to it including written correspondence, meeting minutes, calculations, etc. If you decide to forward this to the Engineering Lab again, then I respectfully request a technical response signed by a licensed engineer qualified to address the question in a professional and scientific manner.

This inquiry is made for a scholarly purpose; it is not for any commercial use.

Thank you for your consideration. Ronald H. Brookens

Sincerely,

Ronald H. Brookman, SE

Dr. Willie E. May, Acting NIST Director Cc:

Dr. Howard H. Harary, Acting Director, Engineering Laboratory

⁴ McAllister et al., p. 488. "Gravity shear loads in a beam were transferred to the bearing seat primarily in the proximity of the web on the bottom flange. Therefore, when the web was no longer supported by the bearing seat, the beam was assumed to have lost support, as the flexural stiffness of the bottom flange was assumed to be insufficient for transferring the gravity loads. Under such conditions, the beam was removed."

⁵ McAllister et al., p. 483.

⁶ McAllister et al., p. 482.

⁷ McAllister, Therese P. (2009) Errata for NIST NCSTAR 1A, NIST NCSTAR 1-9, and NIST NCSTAR 1-9A, Federal Building and Fire Safety Investigation of the World Trade Center Disaster: Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7, January 30. Updated June 27, 2012.



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

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SEP 22 2014

Ronald H. Brookman

Dear Mr. Brookman,

This letter serves as the final response to your July 21, 2014 Freedom of Information Act (FOIA) request #DOC-NIST-2014-001436, to the National Institute of Standards and Technology (NIST) for copies of "all available information in NIST's possession related to this question and the decisions that NIST has made in relation to it including written correspondence, meeting minutes, calculations, etc."

NIST has no documents that are responsive to your request. You have the right to appeal this (partial denial or denial) of the FOIA request. An appeal must be received within 30 calendar days of the date of this response letter by the Assistant General Counsel for Administration (Office), Room 5898-C, U.S. Department of Commerce, 14th and Constitution Avenue, N.W., Washington, D.C. 20230. Your appeal may also be sent by e-mail to FOIAAppeals@doc.gov, by facsimile (fax) to 202-482-2552, or by FOIAonline, if you have an account in FOIAonline, at https://foiaonline.regulations.gov/foia/action/public/home# The appeal must include a copy of the original request, this response to the request and a statement of the reason why the withheld records should be made available and why denial of the records was in error. The submission (including e-mail, fax, and FOIAonline submissions) is not complete without the required attachments. The appeal letter, the envelope, the e-mail subject line, and the fax cover sheet should be clearly marked "Freedom of Information Act Appeal." The e-mail, fax machine, FOIAonline, and Office are monitored only on working days during normal business hours (8:30 a.m. to 5:00 p.m., Eastern Time, Monday through Friday). FOIA appeals posted to the e-mail box, fax machine, FOIAonline, or Office after normal business hours will be deemed received on the next normal business day.

Sincerely,

Catherine S. Fletcher

Freedom of Information Act Officer



Statement (Exhibit C)

Why should the withheld records be made available? The simple answer is because—as a practicing structural engineer for over 28 years—I need to know what NIST engineers were thinking when they declared that ordinary office fires caused the complete collapse of the former 7 World Trade Center (WTC 7) on September 11, 2001. The NIST Engineering Lab has not been responsive to technical inquiries, so I have resorted to FOIA requests for information. My questions and conclusions about NCSTAR 1-9 have been drawn from my experience studying this report, related reports and construction documents for seven years since 2007.

My study is research-oriented and not speculative. I have no interest in simulating building collapses or devising ways to destroy buildings. It is important to emphasize this because the pervasive fear of terrorism following the September 11 attacks enables NIST to withhold structural-analysis data pursuant to 15 U.S.C. § 7306(d).

A detailed answer to the leading question above requires some background information about the specific technical question stated in Exhibit A:

Why were these stiffeners omitted from the 16-story ANSYS model when they obviously affect the bending stiffness and strength of the girder bottom flange?

This question arose early in 2012 while studying shop fabrication drawings of the building; it is related to a specific mode of failure at a specific location that triggered the initiation of collapse according to NCSTAR 1-9. As stated in Exhibit A and in NCSTAR 1-9², the subsequent loss of vertical support for a critical girder and its entire tributary floor area was **assumed** by NIST engineers based on the pretense of a bottom-flange flexural failure. The inclusion of stiffener plates, however, would have prevented this type of failure. Although the omission of stiffener plates from the analysis has been acknowledged— not justified—by NIST officials, the NIST engineers have refused to comment on this observation with any technical explanation whatsoever.

After obtaining original construction drawings of the building (from NIST through FOIA requests) and studying them for several months, I compiled a list of technical questions related to the collapse-initiation sequence discussed in Chapters 8 and 11 of NCSTAR 1-9. A FOIA request submitted to NIST in March 2012 (Exhibit E) sought information about the decisions NIST made in relation to the list of technical questions. This request was not assigned a FOIA

² NCSTAR 1-9, p. 488. "Gravity shear loads in a beam were transferred to the bearing seat primarily in the proximity of the web on the bottom flange. Therefore, when the web was no longer supported by the bearing seat, the beam was **assumed** to have lost support, as the flexural stiffness of the bottom flange was **assumed** to be insufficient for transferring the gravity loads. Under such conditions, the beam was removed." [Emphasis added.]

log number, and it was not processed through the NIST FOIA office. Instead it was forwarded to the NIST Engineering Lab for a response. An incomplete response (Exhibit F) was received on 6/27/2012 in the form of addendums to the errata file³ and "Answers to Frequently Asked Questions" (questions 34 and 35).⁴ As you can clearly see for yourself, there was nothing about stiffeners in the response. When I brought this objection to the attention of the NIST Engineering Lab, the NIST FOIA Officer and the NIST Director, no one had the professional courtesy to respond. The lack of communication did nothing to bolster my confidence in the NIST study of WTC 7.

Others have submitted similar inquiries to NIST regarding the omission of the stiffeners within the last two years. These inquiries are discussed in Exhibit D, while the remainder of this exhibit focuses on a discussion of erroneous and misleading responses issued by NIST to two other inquiries. These statements by NIST officials were noted in Exhibit A, so the NIST FOIA Officer has no excuse for being unaware of them. They are quoted here again for your convenience.

Newman, M. (2013), "The web stiffeners shown at the end of the girder in Frankel drawing #9114 prevent web crippling. The structural analyses of WTC 7 did not show any web crippling failures. Therefore, the web crippling plates did not need to be included in the models/analyses." (October 25).

Schufreider, J. (2014), "NIST detailed structural analysis of the girder in question indicated that web buckling did not occur under the combined effects of gravity loads and fire. Because there was no web buckling of Girder A2001, NIST did not consider the web stiffeners as a factor in the final NIST analyses." (July 11).

As stated in Exhibit A, these two pseudo-technical responses are neither correct nor germane to the question of flange stiffness and strength, and they are invalid from the standpoint of a scientific inquiry into the collapse-initiation mechanism. Here is an analogy to illustrate my point.

Shear walls in a concrete frame building prevent excessive movement and damage in an earthquake. An analysis without these shear walls did not indicate excessive movement and damage or instability when the building was subjected to combined gravity and seismic loading. The walls, therefore, did not need to be included in the analysis.

³ McAllister, Therese P. (2009) Errata for NIST NCSTAR 1A, NIST NCSTAR 1-9, and NIST NCSTAR 1-9A, Federal Building and Fire Safety Investigation of the World Trade Center Disaster: Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7, January 30, updated June 27, 2012. See http://www.nist.gov/manuscript-publication-search.cfm?pub_id=901225

⁴ http://www.nist.gov/el/disasterstudies/wtc/faqs_wtc7.cfm

This analogy and the preceding responses by NIST officials are incorrect from an analytical perspective. The shear walls provide stiffness and strength as they redistribute static and dynamic forces in the building system. Stiffeners in the connection of girder A2001 to column 79 provided stiffness and strength to redistribute static forces on the bearing plate, and they prevented a local bending failure of the bottom flange as the girder moved laterally as discussed in NCSTAR 1-9. Increased stiffness provides increased resistance to load and deformation. One cannot simply ignore stiff structural elements and hope to obtain a correct analysis. Ignoring the effects of stiffeners in a critical connection is wrong.

Web crippling, web buckling and flange bending are three different responses to concentrated forces at the end of a girder. The Public Affairs Officer and the Director of the Congressional and Legislative Affairs Office at NIST are obviously not qualified to address this question, and they have issued erroneous and misleading claims to members of the public. I urge you to seek professional opinion from qualified engineers who are not affiliated with NIST or the Department of Commerce.

Were the NIST engineers who conducted the study of WTC 7 aware of these responses? Do they agree with these responses? The Engineering Lab never acknowledged or responded to my questions regarding the stiffeners in 2012 (Exhibit E). Any record of communication between parties regarding this issue should be made available to the public to clarify any misconceptions. All public inquiries related to this question and corresponding NIST responses should also be made available.



Statement (Exhibit D)

Why was denial of records in error? The simple answer is because the NIST FOIA Officer stated incorrectly in Exhibit B that "NIST has no documents responsive to your request." My request was for all available information in NIST's possession related to this question and the decisions that NIST has made in relation to it. This question refers to the question in Exhibit A:

Why were these stiffeners omitted from the 16-story ANSYS model when they obviously affect the bending stiffness and strength of the girder bottom flange?

I am aware of multiple inquiries and responses to inquiries in NIST's possession—including my own—that relate to the question of omission of stiffeners from the analysis of a specific critical connection.

- FOIA request (inquiry) from Ronald H. Brookman to NIST dated 3/19/12 (Exhibit E).
- E-mail response from Ronald H. Brookman to the NIST WTC Investigation team, Director Patrick Gallagher and FOIA Officer Catherine Fletcher dated 7/1/12. This included the question "What about the 3/4-inch stiffeners (questions 4 and 9)?" that was not addressed in NIST's response to Exhibit E on 6/27/12.
- E-mail inquiry from David Cole to Michael Newman at NIST dated 7/26/13. In this inquiry Mr. Cole asked: "Given that Frankel drawing #9114 shows ¾" web/flange stiffeners installed on the girder at the 13th floor column 79 connection, why weren't the stiffeners reported in NCSTAR 1-9 and shown in the figures listed above?"
- Michael Newman's e-mail response to David Cole (see Exhibits A and C) dated 10/25/13.
- Response letter from Jim Schufreider at NIST to Ms. Madeline Peare in the office of U.S. Senator Barbara Boxer dated 7/11/14. This letter from Mr. Schufreider refers to a letter from Eric Jose Vizcaino dated 5/20/14 and another letter from Mark Graham (no date given).

All of the aforementioned documents are responsive to my request. There are likely others in NIST's possession that relate to the omission of stiffeners from NIST's analysis.

Ronald H. Brookman, Structural Engineer



March 19, 2012

Catherine S. Fletcher, FOIA & Privacy Act Officer National Institute of Standards and Technology 100 Bureau Drive, STOP 1710 Gaithersburg, MD 20899-1710

Re: Freedom of Information Act Request, 5 U.S.C. § 552

Dear Ms. Fletcher:

I respectfully request all available public information under the control of NIST regarding the documents and questions listed below. These documents and questions relate to the 7 World Trade Center (WTC 7) collapse initiation outlined in Chapters 8 and 11 of NIST NCSTAR 1-9. I understand that you are not required to create a record that does not exist; I am asking for all information in NIST's possession that bear on these questions and the decisions that NIST or its subcontractors made in relation to them.

Copies of the following drawings were obtained from the NIST FOIA office:

- Irwin G. Cantor P.C., Structural Engineers (1985). Structural Design Drawings, 7 World Trade Center
- Frankel Steel Limited (1985). Erection Drawings, 7 World Trade Center
- Frankel Steel Limited (1985a). Fabrication Shop Drawings, 7 World Trade Center

Specific questions include the following:

1. NCSTAR 1-9 states that the girder spanning between columns 44 and 79 at floor 13 lacked shear studs to provide composite action with the concrete floor slab,² and this agrees with a partial framing plan included in the report.³ An article appeared in the Canadian Structural Engineering Conference Proceedings — 1986 describing the

¹ Therese P. McAllister et al., NIST NCSTAR 1-9, <u>Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7</u>, Washington: U.S. Government Printing Office, November 2008.

² McAllister et al., p. 342.

³ McAllister et al., p. 343. This is taken from Cantor sheet S-8 revision H dated 8/5/85.

fabrication and construction of the steel structure.⁴ Figure 5 of this article clearly shows 30 shear studs equally spaced along the girder at typical floors including floor 13. How did NIST confirm that shear studs were in fact omitted from the girder at floor 13?

- 2. Frankel Steel drawings E8/9 through E20 and E24 through E44/45 all note: "FOR ADDITIONAL STUDS SEE CUST. DWG. S8 REV. I." Cantor sheet S-8 released by the NIST FOIA office includes revision H but not revision I. Sheet S-8-10 revision I shows 30 shear studs on the girder. Sheet S-8-19 revision I shows an additional bottom flange plate on the girder and no shear studs on the W24 beams east of the girder. Sheet S-8-20 revision I shows 30 shear studs on the girder and an unidentified number of studs on the W24 beams. Was sheet S-8 revision I included in the construction documents for this building? What additional floor loading was present on floors 10, 19 and 20, and were these variations in loading and section properties included in the analytical models?
- √ 3. NCSTAR 1-9 Section 8.8 describes the partial-floor LS-DYNA model used to develop failure modes of floor framing and connections. The seated-beam connection shown in Figures 8-21 and 8-23⁵ was compared to Frankel Steel drawing 1091. This drawing illustrates the one-inch thick bearing plate was 12 inches long. Does the partial-floor model account for the full length of the bearing plate? Why does the 16-story ANSYS model account for only an 11-inch long⁶ bearing plate?
 - 4.) The seated-beam connection shown in Figures 8-21 and 8-23 was also compared to Frankel Steel drawing 9114. This drawing illustrates ¾-inch thick partial-height web stiffeners welded to the girder web and bottom flange. Fillet welds connecting the stiffeners were more than adequate to transfer the vertical shear from the girder web to the stiffeners. Why were these stiffeners omitted from the partial-floor model?
- 5. Thermal expansion caused erection bolts to shear off at each end of the girder. The elongated girder then contacted the column 79 flange in the partial-floor model. The girder was then restrained from excessive lateral displacement by the column side plates. Figure 8-278 appears to show the girder rotated but restrained between the column side plates. The girder was also restrained from excessive lateral displacement at column 44

⁴ John J. Salvarinas, "Seven World Trade Center, New York, Fabrication and Construction Aspects," <u>Canadian Structural Engineering Conference Proceedings—1986</u>, (Canadian Steel Construction Council, Willowdale, Ontario, 1986), pp. 11-1 - 11-44.

⁵ McAllister et al., pp. 349 and 351.

⁶ McAllister et al., p. 527.

⁷ McAllister et al., p. 352.

⁸ McAllister et al., p. 354.

by the column flanges as shown in Frankel Steel drawing 9102. How did lateral walk-off or rocking occur considering these restraints at both ends?

- 6. Table 8-29 lists observed failures in the partial-floor model, but lateral walk-off of the girder from its seat is not listed as an observed failure. How was walk-off verified as a possible failure mode 10 if it was not observed in the partial-floor model?
- 7. Table 8-2 shows that the northern floor beam (W21x44) buckled laterally before other beams buckled in the partial-floor model. Frankel Steel drawing E12/13 shows three W12x19 beams that laterally braced the W21 to the perimeter frame, but Figures 8-22 and 8-27¹¹ indicate that the partial-floor model did not include these framing members. Why were these beams omitted when they obviously affect the buckling characteristics of the northern floor beam?
- 8. NCSTAR 1-9 has numerous references to walk off due to thermal expansion. One reference says the lateral walk off at columns 79 and 81 "...was monitored during the analysis." How does the analytical model shown in Figure 11-15¹³ measure and monitor lateral walk off during the analysis?
- 9. The ANSYS analytical model for the seated-beam connection at column 79 shown in Figure 11-15¹⁴ does not account for the presence of web stiffeners shown in Frankel Steel drawing 9114. A lateral displacement of 5 ½ inches¹⁵ would not cause a loss of vertical support with the stiffeners in place. The assumption that the girder flange would yield in flexure when the girder web moves past the edge of the bearing seat is incorrect. Why were these stiffeners omitted from the 16-story ANSYS model when they obviously affect the bending characteristics of the girder bottom flange?
- 10. Please describe or illustrate quantitatively the displaced shape (translation and rotation) and temperature of the girder cross section at each end and at intermediate points along the span where beams were attached on the east side for the ANSYS Case B 4.0-hour

⁹ McAllister et al., p. 353.

¹⁰ McAllister et al., p. 359.

¹¹ McAllister et al., pp. 350 and 354.

¹² McAllister et al., p. 482.

¹³ McAllister et al., p. 483.

¹⁴ McAllister et al., p. 483.

¹⁵ McAllister et al., p. 482.

analysis. What were the axial forces (magnitude and direction) and temperatures in the five beams framing into the girder on the east side at this stage of the analysis?

This inquiry is made for a scholarly purpose; it is not for any commercial use. Thank you for your consideration; I look forward to your response.

Ronald A. Brookenac

Sincerely,

Ronald H. Brookman, SE



From:

"wtc" <wtc@nist.gov>

Date:

Wednesday, June 27, 2012 11:57 AM

To: Subject:

Re: Freedom of Information Act Request, 5 U.S.C. § 552

Dear Mr. Brookman,

In response to the questions in your letter received by NIST on March 26, 2012, NIST has prepared two Frequently Asked Questions (FAQs) which can be found below and which are posted on the NIST website at http://www.nist.gov/el/disasterstudies/wtc/faqs_wtc7.cfm (questions #34 and 35). In responding to your questions, NIST identified two typographical errors in the report and has also issued errata correcting those typographical errors. The errata will be posted on the NIST website at http://www.nist.gov/manuscript-publication-search.cfm?pub_id=901225 (click on the link to the PDF to retrieve the file). The updated errata file will be available for download tomorrow, June 28, 2012.

Sincerely,

NIST WTC Investigation Team

New FAQs

For the WTC 7 16-story model for structural response to fire effects, why did NIST model the girders without shear studs, given that articles published in the open literature showed drawings of typical floor framing plans of WTC 7 with shear studs on the girders?

The source documents used for developing the structural analysis models of WTC 7 were the structural drawings prepared by the structural engineer of record (Irwin G. Cantor, Structural Engineers) and the erection drawings prepared by the steel fabricator and erector (Frankel Steel Limited). Neither the structural drawing for typical floors 8 through 20 (Structural Drawing S-8) nor the erection drawings for floors 10 through 13 (Erection Drawings E10/11 and E12/13) show any studs on the girders. A structural drawing showing modifications to Floor 10 (Structural Drawing S-8-10) to accommodate increased floor loads in certain areas did indicate shear studs for the girders in the affected areas, though the additional load was not identified on the drawing. The modification also indicated reinforcing some floor connections and adding new plates on the bottom flanges of some north and south floor beams.

A paper by J.J. Salvarinas that was published in the Canadian Structural Engineering Conference Proceedings (1986) contained "Figure 5 - Typical Floor Framing" that showed shear studs on the girders, although no reference was cited for the information presented in the figure. The number of shear studs indicated on the floor plan by Salvarinas is similar to, but not exactly the same as, the number of studs indicated on the modified framing plan for floor 10. For typical floors 8 to 20 (excluding floor 10), both structural and erection drawings of WTC 7 obtained by NIST are not consistent with Figure 5 in the Salvarinas paper.

For the 16-story model of WTC 7, NIST did not include shear studs on the girders based on the

following reasoning:

- (1) The structural floor plans and erection drawings for typical floors are consistent and do not indicate any shear studs on the girders,
- (2) The Salvarinas paper did not cite a source for its figure showing "Typical Floor Framing," and
- (3) To make the modifications to the framing on Floor 10 would have required accounting for the structural changes shown on drawing S-8-10 (steel plates on bottom flanges of floor beams, shear studs on girders, and reinforced connections), and making the attendant changes to the floor loading in order to be consistent. Since the drawings did not provide any information on revised floor loading or revised connections, this was not possible.

What was the purpose of the partial floor model of the northeast section of WTC 7 (Section 8.8 of NIST NCSTAR 1-9) in the investigation of the collapse of WTC 7? How were these analyses used in the final WTC 7 16-story model? Were there any discrepancies between the results of the partial floor model and the 16-story model?

The detailed finite element model of the partial (northeast) floor framing was developed to evaluate its response to elevated temperatures and to confirm which failure modes needed to be accounted for in the 16-story ANSYS model, i.e., which failure modes were *possible*. This detailed model consisted of shell elements to model the steel wide flange sections and plates and the concrete floor slab, and the model was capable of capturing both local and overall member buckling. Shear studs were modeled explicitly as were bolts. Contact interfaces were employed between different components to model, for example, the girder resting on the seats at both column 44 and column 79. Temperature-dependent material properties were defined and appropriate boundary conditions were prescribed. Gravity loads were applied to represent service loads and uniform, monotonically increasing temperatures were applied to the floor beams and girder, to cause both thermal expansion and degradation of mechanical properties.

Results confirmed that possible failure modes included: lateral-torsional buckling of the wide flange shapes, bolt shear failure, stud shear failure, and the potential for the girder to walk off its seat at either column.

The possible failure modes identified in the LSDYNA analysis (explicit finite element solution) were then incorporated into the 16-story ANSYS analysis (implicit finite element solution) through:

- (1) Selection of appropriate ANSYS elements that allowed, for example, member buckling,
- (2) Specially formulated connection elements that captured connection component behavior such as flexibility, slip and gap closure, and failure modes such as bolt failure, weld failure, block shear and walk off, and
- (3) Special-purpose scripts written in ANSYS Parametric Design Language (APDL) that interrogated analysis results at each step to
 - a) determine if a failure criteria such as walk-off was met, and
 - b) modify the model as necessary to account for the failure that was detected.

Differences between the results of the partial floor model and the 16-story model are to be expected. Reasons for these differences include:

(1) While the partial floor model used a simplified thermal loading scenario, in which the beam and girder

temperatures were uniform and were increased monotonically (see Figure 8-25 of NIST NCSTAR 1-9), the 16-story ANSYS model used computed temperatures based on fire dynamics and thermal calculations.

(2) While the columns in the partial floor model were fixed against lateral displacements, the columns in the 16-story model were allowed to move laterally based on the response of the structural system.

While the partial floor model applied rotational and in-plane translational constraints along the west and south boundaries of the floor slab, the 16-story model represented the entire slab for all floors.

April 2012 Text Changes to the NIST Reports of the Federal Building and Fire Investigation of the World Trade Center Disaster, NIST NCSTAR 1-9

NIST has made the following changes to the report on the collapse of World Trade Center Building 7:

1. In Chapter 8, page 342, Footnote 2, text changed as follows:

²Taken from Erection Drawings, sheet E12/13, 12th & 13th Floor Framing Plan.

²Taken from Structural Drawing S-8, Typical floor framing plan 8th to 20th & 24th to 45th Floors.

2. In Chapter 8, page 343, Figure 8-16, note, text changed as follows:

Based on erection drawing of Floors 12/13 (Frankel Steel 1985)

Based on structural drawing of Floors 8 to 20 and 24 to 45(Cantor 1985)

June 2012 Text Changes to the NIST Reports of the Federal Building and Fire Investigation of the World Trade Center Disaster, NIST NCSTAR 1-9

NIST has made the following changes to the report on the collapse of World Trade Center Building 7:

1. In Chapter 11, page 482, Analytical Model for Seated Connection at Columns 79 and 81

The fourth sentence in the 3rd paragraph should be modified as follows:

The travel distance for walk off was 6.25 5.5 in. along the axis of the beam and 5.5 6.25 in. lateral to the beam.

The 5.5 in. dimension was the length of the girder bearing on the seat connection that had to slide off the seat axially to the girder. The 6.25 in. dimension accounted for the length from the flange tip to the far side of the web, so that the web was no longer supported on the bearing plate. This change corrects a typographical error which showed a lateral displacement of 5.5 in. instead of the correct value of 6.25 in., which was used in the analyses.

2. In Chapter 11, page 527, Thermal Effects on Connections for Floor Beams and Girders

The third and fourth sentences in the 3rd paragraph should be modified as follows:

The bearing seat at Column 79 was 44 12 in. wide. Thus, when the girder end at Column 79 had been pushed laterally at least 5.5 6.25 in., it was no longer supported by the bearing seat.

The 16-story model of WTC 7 used a 12 in. bearing plate on the north side of Column 79, consistent with Frankel drawing 1091. The 5.5 in. dimension was incorrectly cited, as the 6.25 in. dimension accounted for the lateral walk-off distance. These changes correct typographical errors. The dimensions and lateral displacements used in the analyses were correct.



OCT 09 2014



Dear Mr. Brookman:

This is to acknowledge receipt of your Freedom of Information Act (5 U.S.C. § 552) (FOIA) appeal dated October 1, 2014 and received in our office on October 7, 2014. In accordance with the FOIA and Departmental regulations, a final determination will be issued by the Assistant General Counsel for Administration.

If you have any questions about this matter, you may contact me at the above address or at 202-482-5391.

Sincerely,

Sarah Coe

Senior Counsel

November 15, 2014

Assistant General Counsel for Administration (Office), Room 5898-C U.S. Department of Commerce 14th and Constitution Avenue, N.W. Washington, D.C. 20230

Re: Freedom of Information Act Appeal (FOIA), 5 U.S.C. § 552

Dear Ms. Coe,

According to the DOC website http://www.osec.doc.gov/omo/FOIA/foiarequest.htm#appeals:

The Department of Commerce's Assistant General Counsel will make a determination on your appeal within 20 business days.

I have not yet heard from you regarding my FOIA appeal dated 10/1/14 and received in your office on 10/7/14. Please send a progress report or determination. Thank you for your consideration and professional courtesy. Randa H. Browning

Sincerely,

Ronald H. Brookman, S.E. 3653

December 29, 2014

U.S. Congressman Jared Huffman

Attn: Constituent Services

1630 Longworth House Office Building

Washington, D.C. 20515

Dear Representative Huffman,

The purpose of this letter is to request your assistance with resolving a Freedom of Information Act (FOIA) appeal filed with the U.S. Department of Commerce on October 1, 2014. It is my understanding that the Assistant General Counsel is required to make a determination within 20 business days following receipt of an appeal. I have not heard from the agency since October 9, 2014. This is not the first time this agency has delayed responding to a similar FOIA appeal.

It's time the Department of Commerce recognized President Obama's public expression regarding the FOIA¹ and acted accordingly.

The Freedom of information Act should be administered with a clear presumption: In the face of doubt, openness prevails. The Government should not keep information confidential merely because public officials might be embarrassed by disclosure, because errors and failures might be revealed, or because of speculative or abstract fears. Nondisclosure should never be based on an effort to protect the personal interests of Government officials at the expense of those they are supposed to serve. In responding to requests under the FOIA, executive branch agencies (agencies) should act promptly and in a spirit of cooperation, recognizing that such agencies are servants of the public.

Thank you for your consideration and assistance.

Sincerely.

Ronald H. Brookman, SE

Enclosures:

Help with a Federal Agency – Print Form (12/29/14)

Status Inquiry Letter to Agency (11/15/14)

Acknowledgement Letter from Agency (10/9/14)

FOIA Appeal Letter to Agency including Exhibits A-F (10/1/14)

Emald H. Brokenac

¹ http://www.whitehouse.gov/the_press_office/FreedomofInformationAct

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Help with a Federal Agency - Print Form

Congressman Jared Huffman Please print, sign and mail/fax to my office.

Date: 12/29/2014

Agency involved: U.S. Department of Commerce, Office of the General Counsel

Numbers Identifying Case (VA claim, Alien number, tax ID, etc.): FOIA Appeal #DOC-NIST-2014-001436

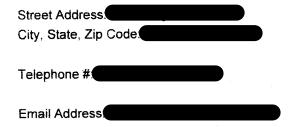
Name: Ronald H. Brookman

Branch of Service (If Applicable): N/A

Military Rank (If Applicable): N/A

Place and Date of Birth:

Social Security #: N/A



I, Ronald H. Brookman, authorize the U.S. Department of Commerce, Office of the General Counsel to release personal information to Congressman Jared Huffman United States Representative. I authorize Congressman Jared Huffman to request and have access to all records and reports pertinent to my request for his assistance in the following matter:

Nature of Problem: Please see the attached cover letter and enclosures. Thank you.

Ronald H. Brookman

PLEASE NOTE:

The Privacy Act of 1974 requires that Members of Congress or their staff have written authorization before they can obtain information about an individual's case. We must have your signature to proceed with a casework inquiry.

Signature:

Date:

Print, and then mail or fax your request to Congressman Jared Huffman at the following address.

Please mail your form to:

Office of Congressman Jared Huffman

Attn: Constituent Services

1630 Longworth House Office Building

Washington, DC 20515 Phone: 202-225-5161

Fax:

Return to the previous page.

Services

Art Competition



March 7, 2015

President Barack Obama 1600 Pennsylvania Avenue Washington, D.C. 20500

Subject: FOIA Appeal DOC-NIST-2014-001436

Dear President Obama,

The U.S. Department of Commerce is stalling a Freedom of Information Act (FOIA) appeal filed on October 1, 2014. The law requires the Assistant General Counsel to make a determination within 20 business days following receipt of an appeal, but I have not heard from the agency since October 9, 2014 when they acknowledged receipt of the paperwork.

According to the Department of Commerce website (http://www.osec.doc.gov/omo/FOIA/foiarequest.htm#appeals):

The Department of Commerce's Assistant General Counsel will make a determination on your appeal within 20 business days.

And the White House (http://www.whitehouse.gov/the_press_office/FreedomofInformationAct) has this to say regarding the FOIA:

The Freedom of information Act should be administered with a clear presumption: In the face of doubt, openness prevails. The Government should not keep information confidential merely because public officials might be embarrassed by disclosure, because errors and failures might be revealed, or because of speculative or abstract fears. Nondisclosure should never be based on an effort to protect the personal interests of Government officials at the expense of those they are supposed to serve. In responding to requests under the FOIA, executive branch agencies (agencies) should act promptly and in a spirit of cooperation, recognizing that such agencies are servants of the public.

Thank you for your consideration and assistance in resolving this problem.

Sincerely,

Ronald H. Brookman, SE

Ronald H. Brookman

Ronald H. Brookman

March 19, 2015

U.S. Department of Commerce, Office of the General Counsel 1401 Constitution Avenue, NW Washington, D.C. 20230

Attn: Barbara S. Fredericks, Assistant General Counsel for Administration

Re: FOIA Appeal to DOC-NIST-2014-001436

Dear Ms. Fredericks:

I am writing to inquire about a Freedom of Information Act (FOIA) appeal filed on October 1, 2014. An agency is required to make a "determination" on the merits of a FOIA appeal within 20 working days of receipt pursuant to 5 U.S.C. § 552(a)(6)(A)(ii)¹. I have not heard from your agency since October 9, 2014 when Senior Counsel Sarah Coe acknowledged receipt of the paperwork. According to the Department of Commerce website²:

The Department of Commerce's Assistant General Counsel will make a determination on your appeal within 20 business days.

And the White House has this to say regarding the FOIA³:

The Freedom of information Act should be administered with a clear presumption: In the face of doubt, openness prevails. The Government should not keep information confidential merely because public officials might be embarrassed by disclosure, because errors and failures might be revealed, or because of speculative or abstract fears. Nondisclosure should never be based on an effort to protect the personal interests of Government officials at the expense of those they are supposed to serve. In responding to requests under the FOIA, executive branch agencies (agencies) should act promptly and in a spirit of cooperation, recognizing that such agencies are servants of the public.

It's no mystery why the public's trust in government is so low. A delay of five months is excessive. Please apply the law, and help to resolve this case. Thank you. Ruceld H Brookmay

Sincerely,

Ronald H. Brookman, SE

cc: U.S. Representative Jared Huffman

¹ https://www.law.cornell.edu/uscode/text/5/552

² http://www.osec.doc.gov/omo/FOIA/foiarequest.htm#appeals

³ http://www.whitehouse.gov/the press office/FreedomofInformationAct

May 2, 2015

U.S. Department of Commerce, Office of the General Counsel 1401 Constitution Avenue, NW Washington, D.C. 20230 Attn: Sarah Coe, Senior Counsel

Re: FOIA Appeal to DOC-NIST-2014-001436

Dear Ms. Coe:

This is the third written inquiry about a Freedom of Information Act (FOIA) appeal filed on October 1, 2014. An agency is required to make a "determination" on the merits of a FOIA appeal within 20 working days of receipt pursuant to 5 U.S.C. § 552(a)(6)(A)(ii)¹. I have not heard from your agency since October 9, 2014 when you acknowledged receipt of the paperwork. This is not rocket science. What is the delay?

Do I need to seek judicial review in Federal Court to obtain a response? Please apply the law, and help to resolve this case. Thank you.

Rueld H. Brokenac

Sincerely,

Ronald H. Brookman, SE

cc: U.S. Representative Jared Huffman

https://www.law.cornell.edu/uscode/text/5/552

JUN 2 5 2015

Ronald H. Brookman

Dear Mr. Brookman,

This responds to your Freedom of Information Act (FOIA) (5 U.S.C. § 552) appeal of October 1, 2014, in which you appealed the National Institute of Standards and Technology (NIST)'s denial of your FOIA request dated July 21, 2014. Your request sought all available information in NIST's possession related to the following question, which pertains to the 7 World Trade Center (WTC) collapse:

The ANSYS model for the seated-beam connection at column 79 shown in Figure 11-15 [footnote omitted] did not account for the presence of bearing stiffeners shown in Frankel Steel drawing 9114. A lateral displacement of 5 ½ inches [footnote omitted] or 6 ¼ inches [footnote omitted] would not cause a loss of vertical support with the stiffeners in place. NIST assumed that the girder flange would yield in flexure when the girder web moved past the edge of the bearing seat. Why were these stiffeners omitted from the 16-story ANSYS model when they obviously affect the bending stiffness and strength of the girder bottom flange?

By letter dated September 22, 2014, Catherine Fletcher, FOIA Officer for NIST, informed you that NIST did not have any records responsive to your request. Accordingly, NIST denied your FOIA request and advised you of your appeal rights.

At issue in your appeal is the adequacy of NIST's search for records responsive to your request. FOIA requires agencies to conduct a reasonable search for records responsive to a request. See Ogelsby v. U.S. Dept. of the Army, 920 F.2d 57, 68 (D.C. Cir. 1990). A reasonable search is one that is calculated to locate all relevant documents. See Weisberg v. U.S. Dept. of Justice, 705 F.2d 1344, 1351 (D.C. Cir. 1983); Steinberg v. U.S. Dept. of Justice, 23 F.3d 548, 551 (D.C. Cir. 1994); Johnston v. U.S. Dept. of Justice, No. 97-2173, 1999 WL 518529 at *1 (8th Cir. 1998). The factual question raised by a challenge to the adequacy of a search is "whether the search was reasonably calculated to discover the requested documents, not whether it actually uncovered every document extant." Safecard Servs., Inc. v. SEC, 926 F.2d 1197, 1201 (D.C. Cir. 1991). The answer to this question depends, in part, on how the agency conducted its search in light of the scope of the request and the requester's description of the records sought. See Meeropol v. Meese, 790 F.2d 942, 956 (D.C. Cir. 1986). The answer also depends on the standards the agency used in determining where responsive records were likely to be found.

See Iacoe v. IRS, No. 98-C-0466, 1999 U.S. Dist. LEXIS 12809 at *11 (E.D. Wis. July 23, 1999). The fact that a search failed to uncover documents is not enough to contradict its reasonableness without more evidence that the search was conducted in bad faith. See Greenberg v. U.S. Dept. of Treasury, 10 F. Supp. 2d 3, 13 (D.D.C. 1998). Rather, the adequacy of a FOIA search is generally determined not by the fruits of the search, but by the appropriateness of the methods used to carry out the search. Steinberg v. Dept of Justice, 23 F.3d 548, 551 (D.C. Cir.1994).

In this instance, personnel under my supervision spoke with Ms. Fletcher and Darla Yonder of NIST's FOIA Office, who confirmed that NIST's Engineering Laboratory, the only laboratory within NIST reasonably likely to have records responsive to your request, conducted a complete search by communicating with the technical member who was involved in the scientific research you have questioned. According to the Laboratory, that member reviewed your request and searched all files—electronic and printed—that relate to WTC 7 and the requested information and did not locate any written correspondences, e-mail messages, meeting minutes, or calculations—in digital or printed format—pertaining specifically to the decision on whether to include the vertical support provided by the stiffener. Given this information, I am satisfied that NIST has conducted a reasonable search for records in response to your request.

For this reason, your appeal is denied. This is the final decision of the Department of Commerce. You have the right to obtain judicial review of this denial, as provided in 5 U.S.C. \$552(a)(4)(B).

Sincerely,

Rafael A. Madan

Acting Assistant General Counsel

for Administration

July 8, 2015

U.S. Congressman Jared Huffman Attn: Constituent Services 1630 Longworth House Office Building Washington, D.C. 20515

Subject: Help with a Federal Agency - Department of Commerce - FOIA Appeal to DOC-NIST-2014-001436

Dear Congressman Huffman,

Thank you for your assistance. I finally heard from the Office of the General Counsel (OGC) after approximately 180 working days since the subject Appeal was filed on October 7, 2014. Referring to 5 U.S.C. § 552(a)(6)(A)(ii), my question still stands: What gives the Department of Commerce the right to ignore the law and not respond?

NIST employs about 3,000 scientists, engineers, technicians, and support and administrative personnel, yet—according to the OGC and the NIST FOIA Office—no one at NIST has any record of correspondence regarding the missing stiffeners. Furthermore, the acting Assistant General Counsel is satisfied that a thorough search for records was done by the NIST FOIA Office after one technical member of the Engineering Lab searched their files. Anyone who has read the subject Appeal knows this is hardly an adequate search.

It is an understatement to say this is unacceptable. I requested all available information in NIST's possession related to the question [Why were these stiffeners omitted from the 16-story ANSYS model when they obviously affect the bending stiffness and strength of the girder bottom flange?] and the decisions that NIST made in relation to it. For the OGC to support a false claim that NIST has no responsive records is a subversion of the law. The following correspondence and all related correspondence in NIST's possession are responsive to my request.

- The NIST Engineering Lab, FOIA Office and Director's Office all received written correspondence from me dated March 19, 2012 and July 1, 2012 regarding the missing stiffeners. NIST made the decision to not respond to questions regarding the stiffeners.
- Michael Newman at NIST received written correspondence from David Cole on July 26, 2013 inquiring about the missing stiffeners.
- Michael Newman at NIST responded in writing to David Cole on October 25, 2013. In his response, Mr. Newman admitted the stiffeners were omitted from NIST's analytical model, and he gave a deceptive and misleading reason why they were omitted. Mr.

Newman's statement was inconsistent with statements in NCSTAR 1-9 (2008) describing the assumed collapse-initiation mechanism.

- Jim Schufreider at NIST received written correspondence from Senator Barbara Boxer's office dated May 20, 2014 which included an inquiry about the missing stiffeners.
- Jim Schufreider at NIST responded in writing to Senator Boxer's office on July 11, 2014. In his response, Mr. Schufreider admitted the stiffeners were omitted from NIST's analytical model, and he gave a deceptive and misleading reason why they were omitted. Mr. Schufreider's statement was inconsistent with Mr. Newman's statement and with statements in NCSTAR 1-9 (2008) describing the assumed collapse-initiation mechanism.
- The Inspector General at the Department of Commerce (OIG) received written correspondence from Dr. William F. Pepper dated December 12, 2013 including reference to the missing stiffeners. This correspondence was forwarded to NIST from the OIG on January 14, 2014.
- Michael Newman at NIST responded in writing to Dr. Pepper on April 14, 2014. In his response Mr. Newman did not mention the stiffeners, but his statement indicates he received a copy of Dr. Pepper's letter and was aware of the issues raised.

A straightforward technical question for the NIST engineers dated March 19, 2012 has prompted this long and convoluted episode. I work and pay taxes. I reserve the right to receive honest answers to legitimate questions from Federal employees regarding errors and omissions that affect public safety. A refusal by NIST to respond—or a deceptive and misleading response demonstrates a failure of scientific inquiry and a complete lack of scientific integrity.

This is not rocket science, and it should not take an act of Congress or a lawsuit in Federal Court to get honest answers to technical questions regarding NCSTAR 1-9 (2008). Since the FOIA Office and the OGC are not responsive, I respectfully request a technical response signed by a licensed engineer qualified to address the question in a professional and scientific manner.

Korald A. Broo

Thank you again for your assistance and consideration.

Sincerely,

Ronald H. Brookman, S.E.

Final Response Letter from the OGC, June 25, 2015 **Enclosures:**

FOIA Appeal to DOC-NIST-2014-001436, October 1, 2014

Rep. Lamar Smith, Chairman, House Committee on Science, Space and Technology Cc: Rep. Eddie Bernice Johnson, House Committee on Science, Space and Technology Dr. William F. Pepper

Rafael A. Madan

July 12, 2015

Congressman Lamar Smith and Congresswoman Eddie Bernice Johnson House Committee on Science, Space and Technology 2321 Rayburn House Office Building Washington, D.C. 20515

Subject: Help with a Federal Agency - Department of Commerce - FOIA Appeal to DOC-NIST-2014-001436

Dear Congressman Smith and Congresswoman Johnson,

I have respectfully included you as recipients of this correspondence due to your Chairmanship and Ranking Membership of the House Committee on Science, Space and Technology. I am concerned—specifically—with the lack of scientific integrity and the lack of honest responses to serious questions regarding research published in 2008 by the National Institute of Standards and Technology (NIST) Engineering Laboratory under the acronym NCSTAR 1-9.

Your Committee is responsible for overseeing NIST and Government activities relating to non-military research as described in the Oversight Plan for the 114th Congress:¹

The Committee will continue to collect and examine allegations of intimidation of science specialists in federal agencies, suppression or revisions of scientific finding, and mischaracterization of scientific findings because of political or other pressures. The Committee's oversight will also involve the development and implementation of scientific integrity principles within the executive branch.

The enclosed documentation clearly shows a pattern of suppression, revision and mischaracterization of scientific findings. Please take this complaint seriously and help to resolve this problem. Thank you for your consideration and assistance.

Sincerely,

Ronald H. Brookman, S.E.

http://science.house.gov/sites/republicans.science.house.gov/files/documents/SST% 200versight% 20Pland 20for% 20the% 20114th% 20Congress.pdf

RosaldH, Brokemas