



WITNESS INTERVIEW TRANSCRIPT

Louis Berger

Miami, FL

HWY18MH009

(33 pages)

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of:

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PEDESTRIAN BRIDGE COLLAPSE
MIAMI, FLORIDA
MARCH 15, 2018

Accident No.: HWY18MH009

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Interview of: DR. AYMAN SHAMA

Via Telephone

Friday,
April 27, 2018

APPEARANCES:

KENNETH BRAGG, Human Performance Investigator
National Transportation Safety Board

DANIEL WALSH, Senior Highway Accident Investigator
National Transportation Safety Board

ROBERT ACETTA, Investigator in Charge
National Transportation Safety Board

REGGIE HOLT, Senior Bridge Engineer-Concrete Specialist
Federal Highway Administration (FHA)

ROBERT GAGE, Attorney
(On behalf of Dr. Shama)

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I N T E R V I E W

(2:09 p.m.)

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3 MR. BRAGG: Today is Friday, April 27, 2018. My name is
4 Kenneth Bragg, from the National Transportation Safety Board,
5 Office of Highway Safety. This interview is in reference to the
6 bridge collapse in Miami, Florida. I want to go ahead and ask
7 everyone to identify themselves.

8 Mr. Walsh, go ahead and identify yourself, please.

9 MR. WALSH: Daniel Walsh, with the National Transportation
10 Safety Board.

11 MR. BRAGG: Mr. Acetta.

12 MR. ACETTA: Robert Acetta with the National Transportation
13 Safety Board, investigator in charge.

14 MR. BRAGG: Mr. Holt.

15 MR. HOLT: Reggie Holt, Federal Highway Administration.

16 MR. BRAGG: Okay. And Mr. Gage, would you go ahead and
17 introduce yourself, and then have your client introduce himself as
18 well?

19 MR. GAGE: Yes. Robert Gage, counsel for Dr. Shama. And
20 I'll ask Dr. Shama to identify himself.

21 DR. SHAMA: Ayman Shama.

22 MR. BRAGG: Would you say and spell your name, please?

23 DR. SHAMA: First name is A-Y-M as in Mike-A-N as in Nancy.
24 Last name is Shama, S as in Sam-H-A-M as in Mike-A.

25 MR. BRAGG: Okay.

1 INTERVIEW OF DR. AYMAN SHAMA

2 BY MR. BRAGG:

3 Q. And Dr. Shama, who are you currently employed with?

4 A. Is this question, is related to the investigation? Because I
5 don't want to get my company involved in this.

6 Q. Okay.

7 MR. GAGE: I think that's probably --

8 BY MR. BRAGG:

9 Q. Okay. So let me ask you the question this way. Are you
10 independently involved with this -- with the bridge project, with
11 the FIU bridge project?

12 A. I do not understand the question.

13 Q. Are you involved with the project as an employee of your own
14 company?15 A. I was involved in this project when I was an employee by
16 Louis Berger.

17 Q. By Louis Berger. And --

18 A. Yes.

19 Q. And are you currently an employee of Louis Berger?

20 A. No.

21 Q. Okay. When did you end that employment?

22 A. End of June 2017.

23 Q. When did you begin employment with Louis Berger?

24 A. As I recall, it was April 2014.

25 Q. What was your reason for leaving employment with Louis

1 Berger?

2 A. I did not leave the company. But the company laid me off.

3 Q. Okay. So the company laid you off. And --

4 A. Yes.

5 Q. -- did they provide you with an explanation of why they laid
6 you off?

7 A. They did not provide an exact explanation, but it was not
8 basically related to the issue that we are discussing today.

9 Q. Okay. So you're saying that -- and I'm just trying to
10 paraphrase. You're saying that they laid you off for a reason
11 that was not related to the FIU bridge project?

12 A. Yes. I confirm it was for another reason. It was not
13 related to the FIU project.

14 Q. When did you become involved in the FIU project?

15 A. Basically, August 2016.

16 Q. I'm sorry. August 2000 when?

17 A. Sixteen.

18 Q. Sixteen?

19 A. Yes.

20 Q. And just give me a brief summary of what your role was in the
21 FIU bridge project.

22 A. My role with the FIU project basically was to provide the
23 peer review that consisted of an independent design check, check
24 of the plans, and a verification that the design is in accordance
25 with AASHTO LRFD and FDOT.

1 MR. BRAGG: Okay. As we get into some specifics about the
2 bridge project, I'm going to let Mr. Walsh lead that area of
3 questioning.

4 Mr. Walsh, would you like to go ahead and start?

5 MR. WALSH: Thank you, Mr. Bragg.

6 BY MR. WALSH:

7 Q. My name is Dan Walsh, with the NTSB. And Dr. Shama, can you
8 please, when you speak into the microphone, speak as loudly as you
9 can please, so that we can hear you and also that it can be picked
10 up by the recording device, please.

11 A. Sure.

12 Q. Dr. Shama, can you please take me through the steps of your
13 independent review of FIGG's design plans?

14 A. Basically, the steps consisted, first, in order to check the
15 design to make sure that the design is okay, basically to
16 consideration that we are doing a peer review, I have to develop a
17 model for the bridge, a simple model. I would say a stick, simple
18 model for the bridge, simple but sufficient enough to determine
19 the performance of the bridge under different kinds of loads and
20 load combination.

21 And this model basically was developed with software or a
22 program called ADINA, A-D as David-I-N as Nancy-A. ADINA is one
23 of the most reliable finite element programs, and Caltran usually
24 recommends ADINA for their, for the projects in California. And
25 we have used -- I personally have used the ADINA in previous

1 projects, like in the design, for example, of new Tacoma Narrows
2 Bridge, A25 in Canada, several bridges, actually. So I used this
3 computer program for this, in this position, or for this
4 independent check.

5 The computer program was used actually to develop the demand
6 on the structure due to different loads, different load
7 combinations that are consistent with AASHTO LRFD and FDOT. We
8 considered, or I considered dead load. I considered live load. I
9 considered wind load. I considered temperature changes, and I
10 considered all the load combinations, service load combinations,
11 strength load combinations, that come for checking the design.

12 Basically, ADINA is -- you have to write, actually, a script
13 with a program. The program takes it and develops a model. And
14 after that, you can run the analysis and look at the results.

15 Q. Thank you, Dr. Shama. What components of the bridge did you
16 independently review? Can you name the specific components?

17 A. Yes. I checked the foundation. I checked the pier bents of
18 the substructure. I checked the substructure of the piling, as a
19 substructure, because these are basically a critical element. And
20 I checked all the diagonals of the superstructure, because these
21 are also very critical element. Regarding the deck and the
22 canopy, I went through them quickly by checking the plan, and by
23 looking into the values that I obtained from the computer program.

24 Q. Thank you. Did -- you said you checked the diagonals. Did
25 you check the nodes as well?

1 A. I couldn't get the question. Can you repeat it again,
2 please?

3 Q. Yes. Dr. Shama, you indicated that you checked all
4 diagonals. Did you check the node members as well?

5 A. The node members?

6 Q. Correct.

7 A. When you say the node members, what do you mean by the node
8 members?

9 Q. What I mean is the node area, where the, for instance, a
10 diagonal would tie into the canopy or the diagonal would tie into
11 the deck. Did you check those areas as well?

12 A. My model actually wouldn't handle this. I handled basically
13 the forces in the members themselves, actually.

14 Q. Okay. So your program analyzed the forces and the members
15 themselves, and not particularly the node area in which it ties
16 into the canopy or the deck?

17 A. Yes. Doing this requires much more time and budget, which is
18 going to exceed the budget and time agreed about with the
19 designer. I -- in the beginning, I suggested to do this kind of
20 analysis, to analyze the connections. I'm talking about the
21 nodes, or the joints to analyze the connections. However, the
22 budget and time to do this actually was not agreed upon with the
23 designer.

24 Q. And what -- tell me a little bit just about the time frame
25 that you just indicated. What was your time frame in order to

1 conduct the independent review?

2 A. The time frame actually, for the agreement with the designer
3 was 7 weeks.

4 Q. All right. Seven-week time frame?

5 A. Yes.

6 Q. Okay. I'm going to ask you about the sequence of
7 construction that is shown on the design plans. Did you review
8 the structure in terms of the different sequence of construction,
9 in particular, the different stages of construction? Or did you
10 just review the entire structure as one structure?

11 A. My model was for the structure as one structure. Doing
12 construction sequence staging analysis was not part of our scope.
13 And again, doing such an analysis requires much more time than
14 what we agreed about.

15 Q. I understand. So your analysis was for the entire structure?

16 A. Yes.

17 Q. And it did not include the breakdown of the different stages
18 of construction?

19 A. Yes.

20 Q. Okay. I just have a follow-up question on the independent
21 review. According to Florida DOT guidelines, would you consider
22 this bridge to be a Category 2 type bridge?

23 A. You're asking about my opinion or what was the agreed result?

24 Q. Well, Florida DOT has certain guidelines as part of their
25 independent review process. And I was just wondering if you are

1 familiar with Category 2 process?

2 A. Yes. I am familiar with Category 2.

3 Q. Okay. Would you consider this to be a Category 2 project?

4 A. I personally would consider that this is a Category 2. Yes.

5 Q. Okay. And are you aware of the independent peer review
6 guidelines for Category 2 bridges?

7 A. Yes. It is mentioned actually in the manual.

8 Q. Okay. Does it require a 90 percent certification letter?

9 A. Yes. It requires this; however, the designer actually
10 preferred that we submit directly for the hundred percent. We
11 started actually with the 90 percent first for the foundation, and
12 after this, they asked that to submit only for the hundred
13 percent.

14 Q. And who requested that? What agency requested that?

15 A. The designer.

16 Q. Would that be FIGG, FIGG Engineering?

17 A. The designer is FIGG Engineering. Yes.

18 Q. Okay. Okay. So you gave a hundred percent certification
19 letter, correct? That -- was that the certification that you gave
20 on this project?

21 A. Yes, it was agreed that I don't provide this certification
22 until I am satisfied hundred percent. So prior to giving the
23 certification, there was a lot of communications between me and
24 the designer in order for them to address all my comments. And
25 they asked that once all my comments are addressed, I would issue

1 the certification.

2 Q. Okay.

3 A. So we had a lot, lot, lot of conference calls, actually,
4 sometimes emails, questions from me to the designer, and then it
5 used to go back and forth until the issues are clarified.

6 Q. Thank you.

7 A. Sure.

8 Q. Do you consider this bridge type to be a major bridge design,
9 concrete, or complex bridge design -- well, my question is, do you
10 consider this to be a complex bridge project?

11 MR. GAGE: Well, I mean, are you asking for -- I'm just
12 clarifying -- expert opinion here or -- I thought we were going to
13 focus on the scope of the work. That's why I asked.

14 MR. WALSH: No. It's related to the scope of the work, Bob.
15 I'm just asking the question that whether this bridge type would
16 be considered a major complex bridge design project.

17 MR. GAGE: Would that -- and again, just so I understand, is
18 that in the context of the work plan or the scope of the work, or
19 is that question beyond scope?

20 MR. WALSH: No. It's associated with the scope of the
21 independent review.

22 DR. SHAMA: There are definitions of complex bridges,
23 actually. This structure, I would describe it as an innovative
24 design, a design that has not been done frequently before, to
25 use -- we used to call it vendi (ph.) or also concrete truss or

1 whatever, used this concept actually is -- was used previously not
2 frequently. So I would consider it innovative design.

3 BY MR. WALSH:

4 Q. Okay. Did you have anybody work with you at Louis Berger to
5 conduct the independent review or did you do that independently
6 yourself?

7 A. Unfortunately, the budget was so tight so I had to do
8 everything by myself.

9 Q. Okay. Do you have any of your files, calculations, or the
10 methods used to conduct the independent review? Do you have any
11 of that in your possession?

12 A. Right now?

13 Q. Yes.

14 A. No. I don't have anything right now in front of me.

15 Q. Okay. Are you familiar with Florida DOT's prequalification
16 for major bridge design concrete projects and also their complex
17 bridge design projects? Are you familiar with the
18 prequalification that's necessary for those types of bridge
19 projects?

20 A. I would say this question, I'm not the right person to
21 answer.

22 Q. Okay. And can I ask why?

23 A. Because my job in the company was to sit, get work, do the
24 work. I'm not the guy who decide which comes, which is going to
25 be done and which is not going to be done, and what are the

1 requirements and all these kinds of thing.

2 Q. Okay.

3 A. I was there doing the work.

4 Q. Do you know if Louis Berger was prequalified on Florida DOT's
5 list to perform this type of work?

6 A. I was not part of all this. This is administrative, beyond
7 me.

8 Q. Okay. Do you know of any other individuals within Louis
9 Berger who were prequalified to conduct this work besides
10 yourself?

11 A. Again, the question I cannot answer because I'm a doer; I'm
12 not a decider.

13 Q. Well, let me ask you if you -- do you feel you were qualified
14 to perform this work?

15 A. Of course.

16 Q. Okay. And what made you qualified to do this type of work?

17 A. Well, my previous experience.

18 Q. And can you go into that a little bit please?

19 A. You want some information about my background?

20 Q. Just your background to perform major bridge design and
21 complex bridge design work.

22 MR. GAGE: Well, I would rephrase that, generally. I think
23 just your background in this area generally, without
24 characterizing the nature of the project. But go ahead,
25 Dr. Shama, I think you -- walk through your qualifications.

1 DR. SHAMA: I can provide actually my resume, and you can
2 look at it actually and see the experience.

3 BY MR. WALSH:

4 Q. But my question would be, have you performed this type of
5 work, an independent review on this type of bridge project before,
6 that is a major bridge design and complex bridge design project?

7 A. Yes.

8 MR. GAGE: I think, Dan, just to be clear, I think, you know,
9 the question kind of assumes a conclusion about the nature of the
10 project. And I'm not agreeing with you or disagreeing with you.
11 I'm just saying generally, when a question has that kind of
12 predicate, I'm not certain that -- it essentially assumes a
13 conclusion. Can I just suggest, though, maybe just -- would you
14 prefer Dr. Shama to send you his resume? Or we can send it to
15 you, to get it to you promptly, or would you like a brief
16 description of his background now?

17 MR. WALSH: If you could send the resume, that would be fine,
18 but I just -- I'm just asking the question if Dr. Shama has
19 performed an independent review on this type of project, bridge
20 project before.

21 DR. SHAMA: Yes, I did.

22 BY MR. WALSH:

23 Q. And what -- can you list those projects?

24 A. Well, there is the Gerald Desmond Bridge in California. It's
25 a cantilever bridge with approaches. The A25 Bridge, it's in

1 Canada, cantilever bridge with approaches. I worked as the design
2 lead for the new Tacoma Narrows Bridge, suspension bridge in
3 Washington State. That's a complex bridge in Washington State. I
4 worked on several bridges here in the, in New York City,
5 suspension bridges. These are considered as complex bridges.

6 And, you know, it's hard to mention everything. You know,
7 it's -- let me recall when I first, the first company I joined and
8 which projects I have done. And well, step by step, this may take
9 like a great deal of time, if you're still not satisfied with
10 these kind of project that I mention.

11 Q. No, I appreciate that listing. Thank you, Dr. Shama.

12 A. You are welcome.

13 MR. WALSH: I have no further questions at this time.

14 MR. BRAGG: Reggie?

15 MR. HOLT: Am I up? Okay. Reggie Holt, Federal Highway
16 Administration.

17 BY MR. HOLT:

18 Q. Okay. Dr. Shama, I've got a couple of questions, I guess
19 related to the review process. Was your review an independent
20 review? Were you given the bridge plans? Or was your review more
21 of a check of the calculations performed by FIGG?

22 A. An independent review.

23 Q. And then what assurance did you have that the plans that you
24 used for this independent review were in fact the last set of
25 plans produced?

1 A. Yeah. They used to update the plans. As they changed things
2 in the plan, they used to update it with me and give me the most
3 updated set, actually. The last set that I had is the final one.

4 Q. Were -- was this correspondence kept, this updated plan set
5 and documentation?

6 A. Basically my role came during the 90 percent, so the update
7 is from the 90 percent to final. So I started with the 90
8 percent. During the 90 percent I had some comments, used to go
9 back and forth with them. And then right after they implemented
10 my comments, basically they issued the final. And I reviewed the
11 final and I found the documents are there, so I issued the
12 certificate.

13 Q. Sure. If I understand correctly, so you had an opportunity
14 to look at the plan set released for construction and verify that
15 the plan set released for construction was in fact the plan set
16 that you incorporated in your independent review?

17 A. No. We were not part of any issues related to construction.
18 I checked the design plan. And our role in the project ended in
19 February 2017. After that, we did not, as a company, as Louis
20 Berger, we did not have any role on this project.

21 Q. But I guess my question then is, you're stating that there
22 was a -- it was a little bit of a fluid process. Changes were
23 being made to the plans as you were doing your independent check.

24 A. Yes.

25 Q. I guess my question is, was there a process in place to

1 verify that the independent check was done on the bridge that was
2 constructed or the plan set that was used to construct the bridge?

3 A. I think I answered your question. Or maybe I don't
4 understand the question.

5 Yes. Like during -- I'm going to repeat it again. At the 90
6 percent, they gave me plans. I checked the plans. I ran
7 analysis, I came up with results. I asked questions, a lot of
8 questions, a lot of comments. They addressed my comments. And
9 they issued later the final plan.

10 Once they issued the final plan, I looked at the final plan
11 -- and these are design plan. I looked at the design plan. I
12 made sure that my comments were addressed, then I issued the
13 certificate. After that, I did not have any role in the project.

14 Q. Okay. All right. Okay. I understand now, that there was a
15 reconciliation. So you said there were a lot of questions and
16 comments. Were they kept in a project file?

17 A. No. Those were done through conference calls, actually.

18 Q. Well, is there any kind of written documentation of those
19 comments?

20 A. Well, the designer preferred this. In the first -- during
21 the submission of the foundations, they were like a form or a
22 comment resolution form, and I submitted the comment resolution
23 form. They answered the resolution form, and it took like a
24 couple of rounds. After this, it was the designer's desire not to
25 do this in the form of written forms, but they are going to make

1 the engineer, the lead engineer available all the time to answer
2 my questions through phone calls. And once these phone calls are
3 done, he used to address my comments in the drawings. If
4 something needs to be changed, they used to send me, for example,
5 a sketch or whatever. And then, later on, they implemented all
6 these comments in the final plan.

7 Q. Okay. So it sounds like that there is some sort of
8 documentation; it might not be complete documentation, but some
9 sort of documentation of comments that were made to FIGG from
10 Louis Berger on the design in this independent review?

11 A. Yes.

12 Q. And that would be kept -- I realize you would have to go to
13 Louis Berger to get this, but that would be kept in their project
14 file?

15 A. Yes. I suppose so. Yes.

16 Q. Okay. Did you manage -- did you have a folder in a
17 directory, or a location where you kept information on your
18 independent review?

19 A. They were kept under certain directory, electronic. And
20 there were emails, too.

21 Q. So they were all housed in a central directory. Okay.

22 So let's talk a little bit about your model. You said it was
23 simple, but efficient. Was this a two-dimensional, a three-
24 dimensional model, or grillage type model? Could you explain?

25 A. A three-dimensional model, actually, as I mentioned it to

1 you, a stick model. So basically in this model, you discompile
2 the structure into a number of nodes according to the geometry and
3 the load plan. The nodes will be connected with elements. Each
4 element is representing a member in the structure. And, of
5 course, in order to represent the member it has to represent the
6 material properties as well as the structure properties in terms
7 of cross-section area, moments of inertia, torsional constant, the
8 shear area for these kind of issues.

9 Q. Okay.

10 A. And I also included the post-tensioning in the model for all
11 the members that had post-tensioning so that the model can
12 realistically represent the structure. And I made that --

13 Q. Go ahead.

14 A. And I made sure, as a first step, to ensure that the
15 structure is consistent with the requirements of the LRFD, AASHTO
16 LRFD basically in that line in terms of vibration.

17 Q. Okay. You mentioned you did a -- you modeled the post-
18 tensioning. Does ADINA have a module that takes into account
19 time-dependent effects of post-tensioning or was the post-
20 tensioning applied to the model as a independent element?

21 A. It was applied to the model as an element directly at the
22 location where the concrete element is located. But the concrete
23 element would be modeled by the beam element. The post-tensioning
24 would be modeled by the truss element. And we apply, as initial
25 condition to the truss element, the springs that would be exerted

1 on, as a result of that post-tensioning.

2 Q. Okay. Were the time-dependent effects taken into account
3 with these post-tensioning forces?

4 A. Say it again.

5 Q. Were the time-dependent effects taken into account? If the,
6 each post-tensioning tendon was stressed at a different point in
7 time, with different concrete strengths and material properties at
8 that point in time, were those effects captured in the ADINA
9 model?

10 A. Those were not basically accounted for.

11 Q. Did you ever have to reconcile your force effects from your
12 model with the force effects from the FIGG model?

13 A. Yes. We used basically to check -- I used, like during the
14 analysis, my analysis would show like something that may, that
15 like makes me, for example, need to ask a question. So I used to
16 call them, ask them, are you getting the same answer, same as I'm
17 getting?

18 So they used to get their model. Basically, they developed
19 their models ahead of me, of course. All right. So like one
20 time, I had a question about an element that's experiencing, for
21 example, (indiscernible) moment. And I called them and I said, I
22 see this; are you seeing this in your model? They got their
23 model, they looked at it, and they said yes, that was -- we are
24 seeing this. And accordingly, they decided actually to introduce
25 a pin to this element. And in the final plans, this was

1 addressed. So that's an example of basically reconciliation with
2 FIGG.

3 Also, initially, in the beginning, when I used to run my load
4 analysis to see the national frequency, the vertical moment
5 vibration, whether it was going to meet with the requirements --
6 actually, the requirements say that it should be like 3 hertz, and
7 my model, initially it was 2.99. I talked with them. When they
8 supplied another iteration of drawings, actually I was able, in
9 the data that they supplied, to modify my model, and later on my
10 model actually was getting a value above 3, actually, from the
11 vertical vibration moment. So these are the kind of issues that
12 we used to discuss during checking the analysis on the plan.

13 Q. Okay. So I understand your answer correctly, so you
14 reconciled force effects when they came up as issues during your
15 independent design. My question is, did you ever look at every
16 element in the bridge and the force effects that generated from
17 FIGG's analysis as part of the --

18 A. This wouldn't be an independent check. If we do that, it
19 wouldn't be an independent check.

20 Q. I understand. But as a final reconciliation. So it was --
21 so your independent analysis, you ran the analysis and if
22 everything was within the specified requirements, it was -- you
23 deemed it okay, and you only rose additional questions to areas
24 that you found fell outside of your -- of the design requirements?

25 A. Yes.

1 Q. Is that correct?

2 A. Yeah.

3 Q. Okay. Did your model use rigid links at the nodal zones?

4 A. No.

5 Q. Excuse me?

6 A. No.

7 Q. No? So you used, you assumed every element was connected at
8 the junction of the diagonal and upper and lower chord?

9 A. Yes. Centerline to centerline.

10 Q. Yeah. I got it. I'd like to go back to your comments that
11 you said you made to FIGG during your independent review. Were
12 there any comments that you had that you thought were more -- very
13 significant?

14 A. Yes. Yes.

15 Q. That required a reconfiguration, let's say, or a --

16 A. Yes.

17 Q. -- different way of designing?

18 A. Yes. Yes. I mentioned that one of the elements, actually, I
19 noticed that the bending moment is basically high. So I discussed
20 this with them, and they agreed to my recommend. And they
21 mentioned that they have to modify the design in order to get rid
22 of this high moment actually. So they provide a pin to this
23 element.

24 Q. Was this the, like the hinge at the -- was this the reason
25 they had the hinge, the hinges at the vertical number 1?

1 A. Yes. Basically it is the vertical number 1.

2 Q. So this is the Freyssinet hinge, or I forget the name of it,
3 but decal?

4 A. Yes.

5 Q. Were there any other significant comments that you recall?

6 A. I don't recall right now, actually, but I can --

7 Q. All right. Okay.

8 A. Yeah.

9 Q. Back to your, this project file --

10 A. Oh yeah, yeah. I recall something. I recall something
11 very -- actually, you know, very, very, very, very significant
12 issue, as we are talking about this.

13 As you know, I -- my model was basically considering the
14 structure when it is finished, when it is completed. And so
15 basically the designer, he provided a table for post-tensioning
16 for all the members, including member diagonal 2 and diagonal 11.
17 Okay.

18 So first, I ran my analysis with these members and I put the
19 post-tensioning there. In the final configuration of the
20 structure, I found huge forces, huge compressive forces in these
21 elements. So I talked to the designer, and the designer explained
22 to me that the post-tensioning would be put only for that
23 transportation stage, when the structure was going to be placed on
24 the transporter, because when the transporter, the structure under
25 it did move, there would be two panels would be cantilevered. And

1 these cantilevered panels would create some kind of tension in
2 members 2 and 11. Right. But after the structure would be placed
3 over the pier, this tension would disappear actually, or the load
4 path was going to change and the tension is going to be changed to
5 compression. All right.

6 So basically I asked if there notes on this, and they put a
7 note for this, that members diagonals 2 and 11 will be post-
8 tensioned, but right after the structure gets placed in position
9 over the pier, the post-tensioning should be destroyed, should be
10 detensioned. And this, in my own opinion, should be done
11 immediately, of course.

12 So in my analysis, I considered that these two elements
13 without post-tensioning -- I removed the post-tensioning, and my
14 analysis basically showed reasonable values for the compression in
15 these elements. And this, I considered that this is basically a
16 very, very significant comment.

17 Q. Okay. Thank you. Another comment: Was the redundancy of
18 the overall system ever discussed in your review?

19 A. From the beginning, actually, this is one thing. Because an
20 innovative design, it has a lot of challenges in the design. But
21 this was a design-build project. Neither the designer, who was
22 FIGG, you know, the independent checker, who was me, can go and do
23 anything, because it was a design that was made by a third party
24 -- I don't know who -- and it was built on. So FIGG built on this
25 design. So to issue -- issues about redundancy was too late

1 during my peer review.

2 Q. Did -- I guess I didn't understand that. I mean, were any
3 kind of additional details, internal details, use of an ADA factor
4 for reduced redundancy, and some normal procedures that are in
5 place to address limited-redundancy structures, was that ever
6 discussed on your independent design review with FIGG?

7 A. Issues regarding to redundancy were not discussed. It was
8 basically an independent check of the design as given.

9 Q. Okay. You mentioned you did a 3-D analysis.

10 A. Yes.

11 Q. Did you check the capacity of the pier diaphragms? I'm
12 assuming that at the pier locations you had outboard nodes from
13 the central structure to transfer the load. Were these checked?

14 A. Which member you are basically ask?

15 Q. The diaphragms. At Pier 1, Pier 2 and Pier 3.

16 A. Diaphragms at our -- the diaphragms at Pier 1, Pier 2, Pier
17 3, we checked the diagonals.

18 Q. No, I'm talking about below the deck. There were built-up
19 concrete members or diaphragms --

20 A. Oh.

21 Q. -- that transferred the central loading from the truss
22 outboard to either bearings or to the pylon. My question is, was
23 there a design check on these elements?

24 A. I think I checked them during my substructure checking
25 actually.

1 Q. I'm thinking that I answered this, but were you made aware of
2 comments from other entities, like FDOT, on this project?

3 A. During the independent check or after the independent check?

4 Q. Either.

5 A. Nobody bring to my attention anything, actually.

6 Q. So no, you were not aware of or given copies of comments made
7 by Florida DOT?

8 A. Again, I don't understand. This comment by Florida DOT came
9 after the incident or before the incident?

10 Q. No, during -- before the incident, during your independent
11 review.

12 A. During my independent review, nothing came to my attention
13 about Florida DOT.

14 Q. Okay. You've mentioned many times that the budget was very
15 tight. What was the budget for this independent review?

16 A. About -- I'm not sure about the number, about 60,000.

17 Q. You said 50,000?

18 A. Sixty. Sixty; 60, 61.

19 Q. 60,000?

20 A. Right. 60,000, 61,000.

21 Q. Approximately.

22 A. Yeah.

23 Q. And I guess my last question, so who at Louis Berger should
24 we contact to -- who would be the best person to contact to get
25 access to this project file?

1 A. I don't know. After I left them, actually I have no idea who
2 is in charge of what, actually.

3 Q. Is there an office manager or a squad leader or somebody
4 that's in management that would be able to understand our request
5 and get the information?

6 A. Again, I don't have any names in my memory right now to
7 mention this is the right person to talk to or that's the right
8 person to talk to. You know, because -- I cannot recommend any
9 names right now.

10 Q. Okay. Who was the office manager of the office that you
11 worked, the name of the person?

12 A. Chris Gagnon.

13 Q. Can you spell that?

14 A. Yeah. And the office manager, he was like the head of the
15 group, not just the office --

16 Q. Okay.

17 A. -- manager. Here again, this was --

18 Q. Okay. So who was that person?

19 A. Chris Gagnon.

20 Q. Can you spell it?

21 A. Chris, C-H-R-I-S -- S as in Sam; Gagnon, G-A-G-O-N [sic].

22 Q. G-A-G-O-M. Okay. Thank you.

23 A. G-O-N. It's O-N.

24 MR. HOLT: That's all, that's all I have.

25 MR. BRAGG: I have a follow-up question for Dr. Shama.

1 BY MR. BRAGG:

2 Q. Do you have any documents or any emails or anything that
3 establishes Louis Berger as being an approved peer reviewer with
4 FDOT?

5 A. I can't get the question. Can you mention the question
6 again?

7 Q. Yes. Do you still have in your possession any documents that
8 would have established Louis Berger as an approved peer reviewer
9 by the Florida DOT?

10 A. By the Florida DOT?

11 Q. Yes.

12 A. I don't have any -- I don't think I have anything.

13 Q. Do you have any emails or documents related to the -- to this
14 bridge project?

15 MR. GAGE: Yeah. I mean, Ken, it's Bob Gage. I mean, we can
16 check for documents and/or -- yeah, I think that's a better way to
17 do it rather than -- I'm glad to speak to you or Dan or anybody on
18 the phone, in terms of document production.

19 MR. BRAGG: Okay. Robert, do you have any questions?

20 MR. ACETTA: I don't really have any questions. The only
21 thing I could think of is that -- and I know Dr. Shama's time is
22 valuable. From some of his answers, it may generate more
23 questions after we have a chance to review them. Is there an
24 opportunity to do follow-up questioning?

25 MR. GAGE: It's Bob Gage again. I mean, obviously Dr. Shama

1 is here voluntarily, and I'm sure you're right. You know, he's --
2 mindful of his professional schedule, yes. I mean, he obviously
3 will continue to cooperate in any way that he can.

4 MR. ACETTA: And at his convenience, of course. We wouldn't
5 want to take him away from work.

6 DR. SHAMA: Sure, sure.

7 MR. ACETTA: Then I don't have anything.

8 MR. BRAGG: How about --

9 MR. WALSH: Kenny, just one follow-up question for Dr. Shama.
10 This is Dan Walsh again, from NTSB.

11 BY MR. WALSH:

12 Q. Dr. Shama, who was your primary contact at FIGG regarding the
13 independent review? Who was, I mean -- yes, who was that
14 individual?

15 A. There are two persons. The lead design teams you need is
16 Manuel. This the engineer who was creating the design
17 technically, and this is the person that I used to resolve with
18 any technical issues. And there is another (indiscernible) --

19 Q. Okay.

20 A. -- called Dwight Dempsey. He was kind of administrative. He
21 was not that involved in technical issue.

22 Q. Okay. And Manuel's last name again is?

23 A. I don't remember his last name, actually, but we can provide
24 it, actually.

25 Q. Okay. All right. Thank you very much.

1 A. You are welcome.

2 MR. BRAGG: Okay. The time is --

3 MR. WALSH: I don't have any further questions, Kenny.

4 MR. BRAGG: All right, great. The time is 3:05 p.m. I'm
5 going to go ahead and conclude the recorded interview.

6 (Whereupon, at 3:05 p.m., the interview was concluded.)

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CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF: PEDESTRIAN BRIDGE COLLAPSE
MIAMI, FLORIDA
MARCH 15, 2018
Interview of Dr. Ayman Shama

ACCIDENT NO.: HWY18MH009

PLACE: Via Telephone

DATE: April 27, 2018

was held according to the record, and that this is the original,
complete, true and accurate transcript which has been transcribed
to the best of my skill and ability.



Pamela Jacobson
Transcriber