

Official Transcript of Proceedings
NUCLEAR REGULATORY COMMISSION

Title: Crystal River Unit 3 2.206 Petition

Docket Number: (n/a)

Location: (telephone conference)

Date: Thursday, January 7, 2010

Work Order No.: NRC-018

Pages 1-32

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 234-4433

1 UNITED STATES OF AMERICA

2 + + + + +

3 NUCLEAR REGULATORY COMMISSION

4 + + + + +

5 THOMAS SAPORITO 10 CFR 2.206 PETITION FOR

6 CRYSTAL RIVER UNIT 3

7 + + + + +

8 TELECONFERENCE

9 + + + + +

10 THURSDAY

11 JANUARY 7, 2010

12 + + + + +

13 The teleconference convened at

14 10:30 a.m., Thomas Blount, Petition Review Board

15 Chair, presiding.

16 NRC STAFF PRESENT:

17 THOMAS BLOUNT, NRR/ADRO/DPR, Petition Review Board

18 Chair

19 THOMAS BOYCE, NRR/ADRO/DORL/LP[L2-2]

20 RICH CHOU, Region II

21 MICHAEL CLARK, OGC/GCHEA/AGCMLE

22 BOB CARRION, Region II

23 FARHAD FARZAM, NRR/DE/EMCB

24 MARK FRANKE, Region II

25 DAVID HARDAGE, Region II

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

LOUIS LAKE, Region II
TANYA MENSAH, NRR/ADRO/PSP[B], Petition Review Board
Coordinator
BRENDA MOZAFARI, NRR/ADRO/DORL/LP[L2-2]
ALI REZAI, NRR/DCI/CPNB
STACEY ROSENBERG, NRR/ADRO/DPR/ PSP[B]
FARIDEH SABA, NRR/ADRO/DORL/LP, Crystal River Unit 3
Project Manager
MARVIN SYKES, Region II
GEORGE THOMAS, Region II

PETITIONER:

THOMAS SAPORITO

PROGRESS ENERGY REPRESENTATIVES PRESENT:

BRIAN McCABE
JOHN FRANKE
GARRY MILLER
JOHN O'NEILL

P-R-O-C-E-E-D-I-N-G-S

(10:34 a.m.)

MS. SABA: Good morning. I would like to welcome -- to thank everybody for attending this meeting.

My name is Farideh Saba, and I am the Crystal River Nuclear Generating Plant Unit 3 Project Manager.

We are here today to allow the Petitioner, Mr. Thomas Saporito, to address the Petition Review Board regarding the 2.206 petition dated December 5, 2009.

I am the Petition Manager for this petition. The Petition Review Board Chairman is Tom Blount. As part of the Petition Review Board, or PRB, review of this petition, Thomas Saporito has requested this opportunity to address the PRB.

This meeting is scheduled from 10:30 a.m. to 12:00 p.m. Eastern Time. The meeting is being recorded by the NRC Operations Center and will be transcribed by a Court Reporter. The transcript will become a supplement to the petition. The transcript will also be made publicly available.

I would like to open this meeting with introductions. As we go around the room, please be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 sure to clearly state your name, your position, and
2 the office that you work for within the NRC for the
3 record. I'll start off. Farideh Saba, Senior Project
4 Manager, Office of Nuclear Reactor Regulation, NRR,
5 Division of Operating Reactor Licensing.

6 MR. REZAI: Ali Rezai, Piping and NDE
7 Branch, Materials Engineer.

8 MR. FARZAM: Farhad Farzam, Mechanical and
9 Civil Engineering Branch, NRR Office.

10 MR. CLARK: Michael Clark. I'm an
11 attorney with the Office of the General Counsel.

12 MS. MOZAFARI: Brenda Mozafari, Senior
13 Project Manager, NRR.

14 MR. BOYCE: Tom Boyce. I'm a Licensing
15 Branch Chief in the Office of NRR, Division of
16 Operating Reactor Licensing.

17 MS. MENSAH: Tanya Mensah. I'm the 2.206
18 coordinator in the office of NRR.

19 [~~CHAIR~~ Tom] BLOUNT: Tom Blount, NRR,
20 Deputy Director in the Division of Policy and
21 Rulemaking. I am the PRB Chair.

22 MS. ROSENBERG: Stacey Rosenberg, NRR,
23 Branch Chief in the Division of Policy and Rulemaking.

24 MS. SABA: Okay. Are there any
25 representatives for the licensee on the phone? Please

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 introduce yourself.

2 MR. McCABE: Yes, thanks, Farideh. This
3 is -- good morning to everyone. This is Brian McCabe.

4 I'm the Regulatory Affairs Manager for Progress
5 Energy. With me on the call today are John Franke,
6 the Crystal River 3 Vice President; Garry Miller, the
7 General Manager responsible for the Crystal River 3
8 containment project; and John O'Neill, who is serving
9 as counsel to Progress Energy.

10 We appreciate the opportunity to
11 participate in the call today. We understand that,
12 per Management Directive 8.11, this is a call between
13 the NRC and the Petitioner, and that the purpose is to
14 afford the Petitioner an opportunity to provide the
15 NRC with additional information relative to the
16 petition.

17 So, as such, we understand and respect our
18 role on this call is not to be an active participant,
19 but to, rather, listen to the discussions, and, if
20 necessary, ask clarifying questions, so that we
21 understand the issues that have been raised.

22 So, again, Farideh, we appreciate the
23 opportunity to listen in on the discussions today.
24 And with that, I will turn it back to you.

25 MS. SABA: Okay. We would like also to --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 NRC employees from the region or anybody else on the
2 line please introduce yourself.

3 MR. FRANKE: From Region II, this is Mark
4 Franke, Chief of Engineering Branch ~~III~~[3], Division
5 of Reactor Safety.

6 MR. CARRION: This is Bob Carron also from
7 Region II, Senior Project Engineer -- Senior Reactor
8 Engineer with Engineering ~~III~~[3].

9 MR. CHOU: Rich Chou, C-H-O-U,
10 Region II --

11 THE COURT REPORTER: Pardon me. This is
12 the transcriber. I am not getting a good recording.
13 Somebody doesn't have their phone on mute. I'm
14 getting interference.

15 MR. McCABE: Hey, Mark Franke, this is
16 Brian McCabe. It seems like when the region is
17 speaking there is a lot of interference in what is
18 coming over the speaker.

19 MR. FRANKE: Okay. So only when we're
20 speaking, Brian?

21 MR. McCABE: Yes, now it's clear. But it
22 seemed like there was some shuffling associated with
23 the speaker that might have been interfering in the
24 communication.

25 MR. FRANKE: Okay. Thank you. What was

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 the last name that the transcriber was able to get?

2 THE COURT REPORTER: I couldn't get the
3 names from -- whenever that region started to
4 introduce themselves, the interference started, so I
5 couldn't get the names. They were -- there were only
6 two names.

7 MR. FRANKE: We'll have the same person
8 basically introduce all of us.

9 MR. SYKES: Okay. So here in Region II we
10 have Mark Franke, Chief of Engineering Branch ~~III~~[3]
11 in the Division of Reactor Safety; we have Bob
12 Carrion, Senior Inspector, Division of Reactor Safety;
13 we have Rich Chou, ~~Senior~~[reactor] Inspector, Division
14 of Reactor Safety; we have David Hardage, Reactor
15 Inspector, Division of Reactor Projects; and Marvin
16 Sykes, Chief, Division of Reactor Projects, Branch
17 ~~III~~[3]. And that's all from here in Region II.

18 And onsite at Crystal River we have I
19 think Lou Lake, Louis Lake, Senior Inspector, DRS,
20 Branch ~~III~~[3], Engineering Branch ~~III~~[3]; and Mr.
21 George Thomas from our Office of Nuclear Reactor
22 Regulation in Washington.

23 MS. SABA: Okay. Mr. Saporito, would you
24 please introduce yourself for the record?

25 MR. SAPORITO: Yes. My name is Thomas

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 Saporito. I'm a United States citizen. I reside in
2 Jupiter, Florida.

3 MS. SABA: Are there any others, such as
4 members of the public, on the phone?

5 MR. DANIELSON: My name is Rick Danielson.
6 I'm a reporter with the St. Petersburg Times.

7 MS. SABA: Could you please spell your
8 name?

9 MR. DANIELSON: Yes. First name Richard,
10 R-I-C-H-A-R-D, last name Danielson, D-A-N-I-E-L-S-O-N.

11 MS. SABA: And would you please repeat
12 your association?

13 MR. DANIELSON: I'm a reporter with the
14 St. Petersburg Times in Florida.

15 MS. SABA: Thank you.

16 MR. DANIELSON: You're welcome.

17 PARTICIPANT: This is the headquarters
18 operations officer. Just for your information, if you
19 do not have a mute on your phone, you can mute it
20 through our system by hitting star 6. And then, when
21 you want to unmute, you can hit star 6 again.

22 MS. SABA: Thank you.

23 I would like to emphasize that we each
24 need to speak clearly and loudly to make sure that the
25 Court Reporter can accurately transcribe this meeting.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 If you do have something that you would like to say,
2 please first state your name for the record.

3 At this time, I will turn it over to the
4 PRB Chairman, Mr. Tom Blount.

5 CHAIR BLOUNT: This is Tom Blount. Good
6 morning. Welcome to the meeting regarding the 2.206
7 petition submitted by Mr. Saporito. I would like to
8 first share some background on our process.

9 Section 2.206 of Title X[10] of the Code
10 of Federal Regulations describes the petition process
11 -- the primary mechanism for the public to request
12 enforcement action by the NRC in a public process.
13 This process permits anyone to petition the NRC to
14 take enforcement-type action related to NRC licensees
15 or licensed activity. Depending on the results of
16 this evaluation, NRC could modify, suspend, or revoke
17 an NRC-issued license, or take any other appropriate
18 enforcement action to resolve a problem.

19 The NRC staff guidance for the disposition
20 of a 2.206 petition request is in Management
21 Directive 8.11, which is publicly available.

22 The purpose of today's meeting is to give
23 the Petitioner an opportunity to provide any
24 additional explanation or support for the petition
25 before the Petition Review Board's initial

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 consideration and recommendation.

2 This meeting is not a hearing, nor is it
3 an opportunity for the Petitioner to question or
4 examine the PRB on the merits or the issues presented
5 in the petition request. No decisions regarding the
6 merits of this petition will be made at this meeting.

7 Following this meeting, the Petition
8 Review Board will conduct its internal deliberation.
9 The outcomes of this internal meeting will be
10 discussed with the Petitioner.

11 The Petition Review Board typically
12 consists of a chairman, usually a manager at the
13 senior executive level, senior executive service
14 level, at the NRC. It has a petition manager and a
15 PRB coordinator. Other members of the Board are
16 determined by the NRC staff based on the content of
17 the information and the petition request.

18 At this time, I would like to introduce
19 the Board. I am Tom Blount, the Petition Review Board
20 Chairman. Farideh Saba is the Petition Manager for
21 the petition under discussion today. Tanya Mensah is
22 the office's PRB coordinator.

23 Our technical staff includes Farhad Farzam
24 and George Thomas from the Office of NRR, Mechanical
25 and Civil Engineering Branch; Ali Rezai from NRR,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 Piping and NDE Branch; Marvin Sykes and Mark Franke,
2 Branch Chiefs from Region II. We also obtain advice
3 from our Office of General Counsel represented by Mike
4 Clark.

5 As described in our process, the NRC staff
6 may ask clarifying questions in order to better
7 understand the Petitioner's presentation and to reach
8 a reasoned decision whether to accept or reject the
9 Petitioner's request for review under the 2.206
10 process.

11 I would like to summarize the scope of the
12 petition under consideration and the NRC's activities
13 to date. On December 5, 2009, Mr. Saporito submitted
14 to the NRC a petition under 2.206 against Progress
15 Energy Corporation at Crystal River Nuclear Generating
16 Station Unit 3.

17 In this petition request, Mr. Saporito
18 identified the following areas of concern. Physically
19 remove the -- Mr. Saporito requests that the NRC take
20 enforcement action against the licensee and issue a
21 confirmatory order requiring that the licensee: one,
22 physically remove the outer 10 inches of concrete
23 surrounding the Crystal River Nuclear Containment
24 Building from the top of the Containment Building to
25 the bottom of the Containment Building and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 encompassing 360 degrees around the entire Containment
2 Building.

3 Two, test samples of the concrete removed
4 from the Crystal River Nuclear Containment Building
5 for composition and compare the test results to a
6 sample of concrete from a similarly-designed facility
7 like the Florida Power & Light Company Turkey Point
8 Nuclear Plant.

9 And, three, maintain the Crystal River
10 Nuclear Station in cold shutdown mode until such time
11 as the licensee can demonstrate full compliance with
12 its NRC operating license for Crystal River, within
13 the safety margins delineated in the licensee's final
14 safety analysis report and within the Crystal River
15 Nuclear Station's site-specific technical
16 specification.

17 And, four, provide the public with an
18 opportunity to intervene at a public hearing before
19 the NRC Atomic Safety and Licensing Board to challenge
20 any certification made by the licensee to the NRC that
21 it has reestablished full compliance with 10 CFR 50
22 and the safety margins delineated in its FSAR and
23 technical specification.

24 Allow me to discuss the NRC activity to
25 date. On December 9, 2009, the Petitioner requested

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 to address the PRB prior to its initial meeting, and
2 requested time to prepare supplemental information for
3 the Board's consideration. And that is the meeting
4 that we are having today.

5 As a reminder for the phone participants,
6 please identify yourself if you make any remarks, as
7 this will help us in the preparation of the meeting
8 transcript that will be made publicly available.

9 Thank you.

10 Mr. Saporito, I will turn the meeting over
11 to you to allow you to provide any information you
12 believe the PRB should consider as part of this
13 petition. You will have one hour, as you requested,
14 to provide additional information to the PRB.

15 MR. SAPORITO: All right. Thank you very
16 much. I appreciate the opportunity to engage the NRC
17 in this manner.

18 First of all, good morning to everyone.
19 As I stated earlier for the record, my name is Thomas
20 Saporito. That's S as in Sam, A-P-O-R-I-T-O. And I
21 am the Petitioner in this matter.

22 As a result of the licensee's discovery of
23 a structural defect in the Crystal River Nuclear Plant
24 Containment Building, I filed a formal request through
25 the NRC 2.206 process. The specific request was for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 confirmatory order to take enforcement action, which
2 the Chairman has addressed very adequately.

3 For the benefit of those members of the
4 public who may be attending this meeting today, I will
5 provide a brief background of the events of the
6 Crystal River Nuclear Plant for which this petition
7 arose. During the maintenance activity performed
8 under the direction and authorization of the licensee
9 to cut an opening in the Containment Building to gain
10 access to replace steam generator units, it was
11 discovered that the -- there were separations or
12 delaminations in the concrete perimeter of the
13 Containment Building.

14 Now, the licensee has been engaged in
15 various testing methods to determine the root cause of
16 the separations with the delaminations. So before I
17 continue, let me -- let me just state that in a prior
18 teleconference call attended by the NRC, and by the
19 licensee, myself, and others, the licensee made a
20 verbal commitment ~~to~~[through] Mr. Jim Scarola, if I'm
21 not mistaken, to determine the root cause of the
22 delamination of the Containment Building structure
23 prior to the restart of the Crystal River nuclear
24 reactor.

25 First, let me say that I have personally

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 worked with Mr. Scarola during the startup of the
2 Florida Power & Light Company St. Lucie Nuclear
3 Reactor Number 2, and I can assure everyone attending
4 this teleconference today that Mr. Scarola is a very
5 competent and knowledgeable individual who always
6 places safety ahead of economics.

7 With respect to the Crystal River
8 Containment Building, the actual root cause of the
9 structural failure may never be fully known. During
10 the last telephone conference call, the licensee
11 stated that they were investigating a number of
12 reasons that may have contributed to the root cause of
13 the Containment Building delamination, and that they
14 were engaged in a process of eliminating this area of
15 suspected reason in an attempt to determine the root
16 cause of the Containment Building delamination.

17 However, because of the nature of this
18 particular structural failure, the actual root cause
19 may never really be discovered. And, instead, the
20 licensee, through the process of elimination, may
21 arrive at what I call a best guess determination of
22 the root cause.

23 Nonetheless, the NRC's focus should not be
24 solely on what the root cause of the containment
25 structure failure was, but instead I would suggest

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 that the agency should focus its attention on whether
2 the licensee at some time in the future will be able
3 to return the Crystal River Containment Building's
4 safety design basis, the safety margins required in a
5 licensee's FSAR, and site-specific technical
6 specifications.

7 In other words, the licensee need not be
8 required to state for certain the root cause of the
9 containment structural failure to be allowed to
10 restart the nuclear reactor, so long as the licensee
11 can demonstrate reasonable assurance that the Crystal
12 River Containment Building can function to meet its
13 safety design basis after repairs are completed.

14 And I think that is the focus that the NRC
15 should be engaged, because there is, you know -- I am
16 not a rocket scientist or a degreed engineer, but I
17 can tell you just, you know, common sense looking at
18 this particular failure, there is a number of reasons
19 that could have caused this failure -- the tensioning
20 of the peripheral tendons prior to making the cut, the
21 manner in which the cut was made, the vibrations,
22 there have been a number of reactor SCRAMs that caused
23 the pressure within the containment structure to vary
24 and caused that failure -- the failure of the concrete
25 material itself or a chemical reaction of the metal

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 material against concrete.

2 There are just so many reasons that to be
3 certain of any one particular reason that caused this,
4 I don't -- as a reasonable-minded person, I don't
5 think it's possible, especially because there was no
6 -- in my research no similar failure to this degree
7 and this extent over the course of the operation of
8 the 104 reactors operating in this country.

9 For the benefit of the NRC, I refer -- I
10 have done some research on this topic, and I refer you
11 to a document that's entitled "Detection of Aging [of]
12 Nuclear Power[] Plant Structures." This was
13 apparently authored by D.J. Naus -- that's spelled N-
14 A-U-S -- from the Oak Ridge National Laboratory, Oak
15 Ridge, Tennessee, and also by H.L. Graves, G-R-A-V-E-
16 S, III, the U.S. Nuclear Regulatory Commission,
17 Washington, D.C.

18 And specific to this article, which drew
19 my attention, it speaks at one point in this article
20 about the -- from a safety standpoint, speaking from a
21 safety standpoint, that the containment is -- hello?

22 MS. SABA: We can hear you.

23 MR. SAPORITO: Oh, okay. I thought
24 someone was -- okay. From a safety standpoint, the
25 containment is one of the most important components of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 a nuclear power[]plant, because it serves as the
2 final barrier to the release of fission products or
3 radioactive particles to the outside environment under
4 postulated accident conditions.

5 So that -- that sums it up. That sums up
6 the importance of the -- of the failure of this
7 Containment Building, why it is so important the
8 licensee's repairs are such that the licensee return
9 this building to its original design basis, because
10 this is -- we are talking about containing nuclear
11 materials from entering the environment and harming
12 the public.

13 The article goes on. It talks about that
14 such physical damage occurs when the geometry of a
15 component is altered by the formation of cracks,
16 fissures, or voids, or its dimensions change due to
17 overload, buckling, corrosion, erosion, or formation
18 of other types of surface flaws. You know, changes in
19 the component geometry can affect structural capacity
20 by reducing the net section available to resist
21 applied loads.

22 So, in essence, the failure or the
23 delamination of the containment structure, and
24 specifically the Crystal River Containment Building,
25 is very significant because it -- in its current state

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 it can no longer meet its safety design basis. It
2 can't function sufficiently to protect public health
3 and safety should there be a nuclear accident within
4 that containment structure, and similar to Three Mile
5 Island where you had, you know, a major portion of the
6 core actually melt down.

7 Fortunately, that containment structure
8 served its design basis, and it functioned to protect
9 the public and the environment by containing those --
10 the majority of that nuclear material, although some
11 was eventually released.

12 So also what caught my attention in this
13 article was it says, "Where concrete degradation
14 incidents have occurred, they have generally done so
15 early in the life of the structure and were corrected.

16 Causes were primarily related to improper material
17 selection, construction/design deficiencies, or
18 environmental effects."

19 It says examples of some degradation
20 occurrences include cracking in basements -- base mats
21 (Waterford, Three Mile Island, North Anna, and Fermi);
22 and it says voids under the vertical tendon bearing
23 plates resulting from improper concrete placement as
24 in -- reference Calvert Cliffs plant; failure or pre-
25 stressing wires, again Calvert Cliffs; cracking of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 post-tensioning tendon anchor heads due to the stress,
2 corrosion, or embrittlement -- they point to
3 Bellefonte, Byron, and Farley plants.

4 And, finally, they talk about the
5 containment dome delaminations due to low quality
6 porous aggregate material and absence of ~~radie~~[radial]
7 reinforcement, and they specifically refer to the
8 Crystal River Nuclear Power[]~~p~~Plant.

9 So these -- this delamination event has
10 apparently occurred before, maybe not to the same
11 degree, but it has apparently occurred before at the
12 licensee's Crystal River Nuclear Plant. It goes on to
13 say that, ~~en-balance~~[unbalanced], pre-stressing forces
14 -- and they referenced the Turkey Point Nuclear Plant;
15 corrosion of steel reinforcement and water intake
16 structures -- again, Turkey Point and San Onofre;
17 leaching of tendon concrete -- again, Three Mile
18 Island. And it goes on and on, and it is giving
19 reasons that these failures were likely to have
20 occurred in the past.

21 There is no definitive root cause found in
22 my research into any of these events. But it is
23 noteworthy that Crystal River has, in the past,
24 experienced containment dome delamination due to the
25 quality of the porous aggregate materials. I mean,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 there was something wrong with the concrete apparently
2 that was poured in the formation of that structure
3 that has -- in the past that has caused delamination.

4 And the NRC does have regulations at
5 10 CFR Part 54 which states to licensees like Florida
6 Power -- or Florida -- excuse me, Progress Energy
7 Corporation, in its operation of the Crystal River
8 Nuclear Power[] Plant with respect to the structural
9 integrity of the Containment Building.

10 The article also references -- it says
11 here that the most significant information came from
12 inspections performed by the NRC staff of six plants
13 licensed before 1977. And it says most of the
14 information on degraded conditions of the containment
15 structures was submitted by licensees under LERs, or
16 licensee event reports, under 10 CFR 50.73. That went
17 to the inspections by licensees, voluntary
18 inspections, to try to do some type of long-term
19 surveillance of any type of corrosion or defects.

20 But the article says -- points out here
21 that -- this is very significant. It says further,
22 "Based on the results of inspections and audits, the
23 NRC was concerned because many licensee containment
24 examination programs didn't appear to be adequate to
25 detect degradation that could potentially compromise

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 the containment leak-tight integrity."

2 So what -- in other words, you know, the
3 status quo of the nuclear industry in their -- their
4 current surveillance programs doesn't appear to be
5 adequate to make detections, like the delamination
6 event we're talking about here at the Crystal River
7 Nuclear Power[]ePlant in its Containment Building.

8 NRC regulations at Appendix J, under
9 10 CFR Part 50, requires a general inspection of the
10 accessible interior and exterior surface of
11 containment structures like that at Crystal River and
12 components to uncover any evidence of structural
13 deterioration that may affect either the containment
14 structural integrity or leak-tightness.

15 So, you know, how do you -- how do you
16 inspect a containment structure at a Crystal River
17 facility on a routine basis to make sure that you
18 don't have a delamination?

19 My concerns are that, you know, you -- the
20 current visual inspections are not satisfactory,
21 obviously, and the current inspection techniques being
22 used by the licensee for the remaining structure of
23 the containment facility at Crystal River, in my
24 opinion, aren't sufficient to determine if there
25 exists more cracks, more fissures, more voids, more

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 delaminations of the Crystal River Containment
2 Building.

3 So, you know, the -- this research article
4 that I've been pointing to here throughout this
5 discussion, they are talking about different
6 volumetric methods to make determinations of
7 delaminations and cracks and fissures and voids, and
8 they talk about ultrasonic testing, eddy current
9 testing, radiographic testing.

10 And it even points to some of the
11 standards that are defined in Article IWE-3000 of the
12 ASME Code, but all of these tests which this article
13 speaks to, and all of the tests that the licensee has
14 done to date, are more or less non-destructive
15 testing, meaning there is some means to inject some
16 certain type of signals and the resultant feedback to
17 make a reasonable determination whether or not other
18 delaminations exist at the Crystal River containment
19 structure. And those determinations are not proof
20 positive, in my view, that other fissures or cracks
21 are not present.

22 Now, in my opinion, the only way to make
23 certain that there are no other delaminations, cracks,
24 fissures, voids, or separations in the containment
25 structure itself is to remove 10 inches of concrete

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 from the perimeter of that facility, from the top to
2 the bottom, 360 degrees around.

3 And when I -- the reason I quote [~~in~~10]
4 inches is because you have peripheral tendons, the
5 peripheral tendons that surround the Crystal River
6 containment structure from top to bottom. They are
7 five and a quarter inches in diameter. The
8 containment wall itself -- containment wall itself is
9 42 inches thick from inside to the outside.

10 If you look at the pictures that are
11 already on record of these -- of the cut-away of the
12 opening, you can see that the horizontal tendons,
13 which are five and a quarter inches in diameter, are
14 very near the outer edge of that 42-inch thick wall,
15 so much so, if you visually can place two of them side
16 by side, you could see that it is -- there is less
17 than a foot of concrete between the exposed tendon and
18 that -- where the licensee has cut an opening in the
19 containment wall, you will see the exposed tendon.

20 Well, that top [~~perous~~horizontal] tendon
21 is within 10 inches of the exterior of that
22 containment wall. So that means there is a tremendous
23 amount of force being applied to a very small part of
24 that 42-inch thick wall. It may or may not have
25 something to do with the delamination in this case.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 You know, I can't say.

2 But on the other hand, what we may have
3 here is a design -- design flaw, meaning the actual
4 design of this containment structure having those
5 tendons placed so close, within 10 inches of the
6 exterior part of that 42-inch thick concrete wall,
7 that design may itself be flawed and subject the
8 entire structure to other cracks and fissures and
9 voids, which the licensee simply cannot detect with
10 any type of instrumentation to make certain that -- of
11 their non-existence.

12 Therefore, the only way to protect public
13 health and safety is to remove 10 inches of concrete
14 all around the building, from top to bottom, so you
15 would expose all of the tendons from top to bottom.
16 And with that concrete removed, you could reform that
17 structure, and in my view it should be reformed so
18 that you would add additional concrete when you repour
19 it, so that you would have -- so that you would have
20 those tendons, which are now within 10 inches of the
21 exterior perimeter of that concrete structure, you
22 should reform it so that when the new concrete is
23 poured that those tendons are in the middle of the
24 wall.

25 So you would have to add concrete so that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 the entire thickness of the wall places the steel
2 perimeter tendons exactly in the middle of that wall,
3 so that you won't have a repeat of this situation,
4 because you would have the extra structural support of
5 the concrete outside the tendons, and it wouldn't be
6 mere 10 inches.

7 Now, the FSAR required licensee to build
8 this containment structure with a model with a thick
9 model -- model a thick perimeter wall, meaning it is
10 one -- one solid structure. So this delamination
11 obviously violates the safety margins of the FSAR and
12 the site-specific technical specifications for
13 operation of a Crystal River nuclear reactor under its
14 current license.

15 So, therefore, what I would like the NRC
16 to focus on is the -- eventually, you know, we need to
17 get the plant back online, of course, because although
18 we have numerous avenues of renewable energy
19 available, or at our disposal in this current day, we
20 have a viable nuclear power[]plant here that should
21 be brought back into service as soon as possible with
22 safety foremost of course.

23 So to that extent, if we are going to
24 bring this reactor back online -- and we need to make
25 certain to protect public health and safety and to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 protect the environment that this containment building
2 not only meets but exceeds its original design basis
3 which is delineated in the FSARs.

4 And the only way to do that is to make
5 certain there aren't any more flaws in that -- in that
6 building. And you have -- and the only way you are
7 going to do that is through destructive removal of the
8 10 inches -- of the remaining 10 inches of concrete
9 around the entire building, top to bottom, until you
10 can visually inspect it.

11 And in addition to that, when the licensee
12 arrives at the point where repairs are actually going
13 to be made, it makes -- it is just common sense that
14 you reform the containment building with additional
15 concrete. And with the existing -- with the existing
16 10 inches removed, as I spoke to earlier, you are
17 going to have a higher degree of adhesion from the old
18 concrete to the new concrete, because it is going to
19 be uniform, you are going to -- you are going to have
20 a -- you are going to form that -- put new forms
21 around the facility to pour the new concrete, and you
22 are going to have a higher degree of success and
23 reasonable assurance that the concrete perimeter wall
24 of the Containment Building has been restored to
25 monolithic status.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 Otherwise, if the NRC allows the licensee
2 to merely remove 20 or 30 feet around the existing
3 defect, and to do a patch, there is no reasonable
4 assurance, number one, that that patch adequately
5 adhered to the existing concrete or that other
6 fissures and voids and delaminations do not exist.

7 So those are my concerns, and I have given
8 the NRC some direction through reference of this
9 document I spoke to earlier, which has covered a lot
10 of these areas. But, you know, what the NRC should be
11 concerned with is that the containment building
12 eventually be returned to its original design basis,
13 if not better, and that the licensee has provided
14 reasonable assurance through removal of the perimeter
15 concrete that there are no more fissures or voids, and
16 that recurrence through the method of repair assures
17 that these defects won't again occur in the future.

18 And if there is any questions, I will
19 certainly do my best to answer them at this time.

20 CHAIR BLOUNT: Mr. Saporito, this is Tom
21 Blount. I do have a question. Could you go back to
22 the title of the article that you were using as a
23 reference, please, and give me the --

24 MR. SAPORITO: Yes. Yes, it's entitled
25 "Detection of Aging [of] Nuclear Power[.] [p]lant

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 Structures." And underneath that it says "draft," and
2 underneath that it says D as in David, J as in Jack,
3 Naus, N as in Nancy, A-U-S, Oak Ridge National
4 Laboratory, Oak Ridge, Tennessee, and underneath that
5 it has H as in Henry, L as in Lucy, Graves, G-R-A-V-E-
6 S, III, U.S. Nuclear Regulatory Commission,
7 Washington, D.C.

8 CHAIR BLOUNT: Does that -- this is Tom
9 Blount again. Does that document have a number
10 associated with it?

11 MR. SAPORITO: I don't -- I don't see a
12 document number.

13 CHAIR BLOUNT: Okay. What I'm asking is,
14 is it an NRC document?

15 MR. SAPORITO: Well, I believe it -- I
16 believe it is. It is -- well, there is a -- going to
17 the very end of it here, it looks like it's 36 -- 36,
18 37 pages. It's -- well, I'm trying to find you a
19 reference. Okay. There is no -- I mean, there's a
20 bunch of NRC -- it references a bunch of NRC documents
21 at the very end of the document, but there is no --
22 there is no telling the NRC database number for this.

23 CHAIR BLOUNT: Okay. So it is the NUREG,
24 then. That's what I'm asking you. Is it --

25 MR. SAPORITO: No, it's not a -- I don't

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 believe it's a NUREG. No, I think -- I believe this
2 is a document that was drafted by these two
3 individuals for the benefit of the NRC. And whether a
4 NUREG was developed from this I -- I can't say at this
5 point. I haven't had enough time to do further
6 research.

7 CHAIR BLOUNT: Okay. All right. That's
8 -- I was just trying to understand the genesis and the
9 basis of the document, and I think you told me
10 somewhat that it is a draft document.

11 MR. SAPORITO: Yes.

12 CHAIR BLOUNT: Okay. And it was developed
13 by an NRC employee.

14 MR. SAPORITO: Yes, it appears to be.
15 H.L. Graves, III, appears to be an NRC employee, and
16 D.J. Naus appears to be an employee of the Oak Ridge
17 National Laboratory.

18 CHAIR BLOUNT: Okay. Gotcha. I
19 appreciate that.

20 Let's see. At this time, does anyone at
21 the headquarters staff have any questions for Mr.
22 Saporito?

23 (No response.)

24 Okay. Looking around the table, seeing no
25 questions here, does anyone for the region have any

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 questions for Mr. Saporito?

2 MR. SYKES: No, we don't in Region II.

3 CHAIR BLOUNT: And from Crystal River NRC
4 staff?

5 MR. LAKE: No questions from Crystal River
6 NRC staff.

7 CHAIR BLOUNT: Thank you. Does the
8 licensee have any questions for Mr. Saporito?

9 THE COURT REPORTER: I'm sorry. Who was
10 that from the region, the Crystal River staff? This
11 is the transcriber.

12 MR. SYKES: This was Marvin Sykes in
13 Region II.

14 MR. LAKE: This is Louis Lake down here,
15 NRC, at Crystal River.

16 MR. McCABE: Thanks, Tom. This is Brian
17 McCabe from Progress Energy. Progress Energy has no
18 questions.

19 CHAIR BLOUNT: I understand no questions.
20 Do we have any members of the public on
21 the line?

22 (No response.)

23 Is the gentleman from the press still on
24 the line?

25 MR. DANIELSON: Yes, this is Rick

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 Danielson with the St. Pete[rsburg] Times. I don't
2 have any questions.

3 CHAIR BLOUNT: Before I conclude, members
4 of the public may provide comments regarding the
5 petition and ask questions. I understand you have no
6 questions at this time. Do you have any comments?

7 (No response.)

8 Understanding that there are no questions
9 or comments, Mr. Saporito, thank you very much for
10 taking the time to provide the NRC staff with
11 clarifying information on the petition you submitted.

12 Before we close, does the Court Reporter
13 require or need any additional information for the
14 meeting transcript?

15 THE COURT REPORTER: I do.

16 (Whereupon, some spellings and clarifications of
17 technical terms were provided by Mr.
18 Saporito.)

19 CHAIR BLOUNT: Very good. With that, the
20 meeting is concluded, and we will be terminating the
21 phone connection. Thank you very much for your time,
22 everyone. Have a nice day.

23 (Whereupon, at 11:21 a.m., the proceedings in the
24 foregoing matter were concluded.)

25

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701