

May 31, 2007

Mr. Mark E. Leyse
P.O. Box 1314
New York, NY 10025

Dear Mr. Leyse:

In an email addressed to Mr. Reyes, the Executive Director for Operations at the Nuclear Regulatory Commission (NRC), dated April 25, 2007, you submitted a petition pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 2.206 of the NRC's regulations, requesting that enforcement action be taken against Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3). You requested that the NRC "...either 1) revoke the operating license of Indian Point Units 2 and 3 ('IP-2 and -3'), 2) order the licensee of IP-2 and -3 to immediately suspend the operations of IP-2 and -3, or 3) temporarily shutdown IP-2 and -3, per 10 C.F.R. § 2.202." As the basis for your petition, you stated that there are deficiencies in the emergency core cooling system (ECCS) at IP2 and IP3. Your petition was referred to the Office of Nuclear Reactor Regulation (NRR) and is publicly available in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession No. ML071150299.

On May 24, 2007, you participated in a teleconference with NRR's Petition Review Board (PRB) to discuss your petition. The transcript of that teleconference is attached. That discussion was considered by the PRB in its review of your request for immediate action and in deciding whether the petition meets the criteria for acceptance under 10 CFR 2.206. Your request for immediate suspension of operations at IP-2 and IP3 is denied because you identified no safety hazard. The PRB's final decision is that your petition does not meet the criteria for acceptance under 10 CFR 2.206 because you did not provide facts sufficient to constitute a basis for the requested action. Specifically, you identified no facts to indicate that IP2 or IP3 is in violation of any NRC requirement, or that operation of IP2 or IP3 presents a safety hazard.

The PRB provides the following clarification related to your questions at the teleconference. The PRB indicated that there would be opportunities for hearing requests during the license renewal process, which is in the initial phases at IP2 and IP3. However, the condition of fuel rods would not be a valid hearing request under license renewal. The fuel rods are typically used in the reactor core for three cycles or fewer, so they are not considered as a long-term aging issue which could be addressed in license renewal. The PRB notes that a petition for rulemaking is an appropriate process to address your concerns, and further notes that you have submitted such a petition (ADAMS Accession No. ML070871368, docket PRM-50-84).

M. Leyse

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Thank you for your interest in these matters.

Sincerely,

/RA/

Jennifer Golder, Deputy Director (Acting)
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure:
PRB Transcript dated May 24, 2007

cc w/encl: See next page

M. Leyse

-2-

Thank you for your interest in these matters.

Sincerely,

/RA/

Jennifer Golder, Deputy Director (Acting)
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure:
PRB Transcript dated May 24, 2007

cc w/encl: See next page

Package: ML071500267, Letter: ML071500238

OFFICE	LPL1-1/PM	LPL1-1/LA	LPL1-1/BC	DD/DPR(A)
NAME	JBoska	SLittle	MKowal	JGolder
DATE	5/31/07	5/31/07	5/31/07	5/31/07

Official Record Copy

LETTER TO MR. LEYSE DATED MAY 31, 2007

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ECobey, RI

GLongo, OGC

JGolder

RidsOGCMailCenter

RidsEDOMailCenter

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RidsRgn1MailCenter

RidsAcrcAcnwMailCenter

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Official Transcript of Proceedings
NUCLEAR REGULATORY COMMISSION
NRR PETITION REVIEW BOARD

Title: Mark Leyse 10CFR2.206 Petition on Indian Point

Docket Number: 50-247, 50-286

Location: (telephone conference)

Date: Thursday, May 24, 2007

Work Order No.: NRC-1593

Pages 1-28

Edited by John Boska, NRR Petition Manager

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Enclosure

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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MARK LEYSE 10CFR2.206 PETITION ON INDIAN POINT

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TELECONFERENCE

+ + + + +

THURSDAY

MAY 24, 2007

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The conference call was convened at 1:00 p.m.

PETITION REVIEW BOARD MEMBERS PRESENT:

JENNIFER GOLDER NRR, PRB Chairman

JOHN BOSKA NRR, Petition Manager

GIOVANNA LONGO Office of the General Counsel

FRANK ORR NRR

TANYA MENSAH NRR

PAUL CLIFFORD NRR

GUESTS:

Mark E. Leyse

Robert H. Leyse

P R O C E E D I N G S

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(1:11 p.m.)

MR. BOSKA: My name is John Boska. I'm the Petition Manager for this petition. And I'll get us started with some introductory remarks.

MR. R. LEYSE: So you will be the only person?

MR. BOSKA: No, we have more people here in the room where I am and we will introduce ourselves.

MR. LEYSE: Is Entergy going to participate?

MR. BOSKA: No, Entergy will not participate.

MR. LEYSE: Okay. Is Entergy there?

MR. BOSKA: No.

MR. BOSKA: Is anyone from Entergy on the line? (No response). They had told me previously they were not going to participate. And I don't hear them on the line.

Okay, so my name is John Boska. I'm the Indian Point Project Manager and the Petition Manager for this petition. And the Petition Review Board Chairman is Jennifer Golder.

1 MS. GOLDER: I'm here.

2 MR. BOSKA: And as part of the Petition
3 Review Board's review of this 2.206 petition, Mr.
4 Leyse has requested an opportunity to address the
5 Petition Review Board and provide additional
6 information.

7 This meeting is scheduled to last until
8 2:00 p.m. and it is being recorded by the NRC
9 Operations Center and is being transcribed by a Court
10 Reporter. And the transcript will become a supplement
11 to the petition that was submitted on April 25th by
12 Mr. Leyse. It will also be made publicly available.

13 I'll open the meeting with introductions.
14 And as we go through the introductions, please clearly
15 state your name, your position, and the office that
16 you work for within the NRC for the record.

17 I'm John Boska, the Petition Manager, and
18 I work for NRR.

19 MS. GOLDER: I'm Jennifer Golder. I am
20 the Petition Review Board Chairman. And I work for
21 NRR.

22 MS. LONGO: I am Giovanna Longo. I'm a
23 Senior Attorney in the Office of the General Counsel.

24 MR. ORR: I'm Frank Orr, Reactor Systems
25 Engineer in NRR.

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1 MR. CLIFFORD: Paul Clifford, Fuels
2 Engineer, NRR.

3 MR. ROBINSON: Jay Robinson. I'm a
4 Project Manager from NRR.

5 MS. MENSAH: Tanya Mensah, I'm the 2.206
6 Coordinator from NRR.

7 MR. BOSKA: All right. We've completed
8 the introductions here at NRC Headquarters. Are there
9 any NRC participants from NRC Region I on the phone?

10 (No response.)

11 MR. BOSKA: Okay, hearing none --

12 MR. R. LEYSE: One question, who was the
13 participant prior to Mensah?

14 MR. BOSKA: Jay Robinson.

15 MR. R. LEYSE: Did you say Robinson?

16 MR. BOSKA: Yes.

17 MR. R. LEYSE: Thank you.

18 MR. BOSKA: You're welcome.

19 MR. BOSKA: Entergy is the licensee for
20 Indian Point. Is there anyone from Entergy on the
21 phone?

22 (No response.)

23 MR. BOSKA: Okay. Mr. Leyse, could you
24 introduce yourself for the record please?

1 MR. LEYSE: Sure. My name is Mark Edward
2 Leyse.

3 MR. BOSKA: Thank you. And could your
4 guest introduce himself please?

5 MR. LEYSE: Yes.

6 MR. R. LEYSE: Yes. My name is Robert H.
7 Leyse. And in about a minute and a half, I can give
8 you my rundown if you want it.

9 MR. BOSKA: Yes just please hold off a
10 minute --

11 MR. R. LEYSE: Yes.

12 MR. BOSKA: -- while we go through the
13 process.

14 MR. R. LEYSE: Go ahead.

15 MR. BOSKA: I apologize for mispronouncing
16 your last name. I understand it is Leyse?

17 MR. LEYSE: Correct.

18 MR. BOSKA: All right. Thank you.

19 I'd like to emphasize that we each need to
20 speak clearly and loudly. And if you break into the
21 conversation, please state your name so the Court
22 Reporter can correctly record which remarks came from
23 which person.

24 And at this time, I'll turn it over to the
25 Petition Review Board Chairman, Jennifer Golder.

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1 MS. GOLDER: Good afternoon. This is
2 Jennifer Golder. Welcome to the teleconference
3 meeting regarding the 2.206 petition submitted on
4 emergency core cooling system issues at Indian Point.
5 From this point forward, I will address -- I will
6 refer to emergency core cooling system as the ECCS.

7 On April 24th, 2007, Mark Leyse, the
8 petitioner, submitted to the NRC a petition under
9 2.206 regarding deficiencies of the ECCS at Indian
10 Point Units 2 and 3. In the April 24th, 2007 petition
11 request, Mr. Leyse requests that the NRC revoke the
12 operating license of Indian Point Units 2 and 3, order
13 the licensee of Indian Point 2 and 3 to immediately
14 suspend operations of Indian Point Units 2 and 3, also
15 temporarily shut down Indian Point Units 2 and 3.

16 In the event of Option Three, the
17 petitioner requests that the NRC order the licensee to
18 correct the current deficiencies of the ECCS design
19 basis and reconfigure the power production levels of
20 both plants, making Indian Point Units 2 and 3
21 compliant with 10 CFR 50.46b.

22 In the event of a license renewal process,
23 conduct review to the license renewal of Indian Point
24 Units 2 and 3 that encompass conservative ECCS
25 evaluation calculations modeling scenarios where one-

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1 cycle fuel would have been heavily crudded and/or
2 oxidized fuel rods would have crud-induced corrosion
3 failures.

4 I would like to point out that the NRC
5 staff reviewed the immediate request to order the
6 licensee of Indian Point Units 2 and 3 immediately
7 suspend operation of Indian Point Units 2 and 3. The
8 PRB denied this request on the basis that no factual
9 information was provided in the petition regarding
10 Indian Point Units 2 and 3.

11 At this time, the PRB has reviewed the
12 aforementioned petition for review and as described in
13 our 2.206 process document, Management Directive 8.11,
14 which is publicly available, the petitioner has
15 requested to meet with the PRB prior to the Board's
16 internal meeting to decide whether to accept the
17 petition for review under the 2.206 process.

18 The purpose of today's meeting is to
19 provide the petitioner with an opportunity to provide
20 any relevant additional information and support for
21 the petition in advance of the Petition Review Board's
22 internal meeting.

23 As described in our process, the NRC staff
24 and the licensee, who have also been invited to this
25 meeting, but they didn't wish to meet, will have the

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1 opportunity to ask clarifying questions of the
2 petitioner. For clarification, the licensee is not
3 part of the decision-making process for the NRC's
4 2.206 process.

5 I want to emphasize that the purpose of
6 this meeting is not to determine whether the NRC
7 agrees or disagrees with the contents of the petition.
8 Rather it is to clarify the issues in the petition for
9 understanding so that the NRC can decide whether to
10 accept the petition for review.

11 After the PRB's internal meeting, we will
12 inform the petitioner of our decision.

13 At this time, I'd like to introduce the
14 Board and then turn the meeting over to the
15 petitioner, Mr. Mark Leyse.

16 Typically the Board consists of a
17 Chairman, usually an SES-level Manager at the agency.
18 That is myself. It has a Petition Manager, who
19 already spoke, Mr. John Boska which, for a plant-
20 specific petition, it is usually the licensing
21 Project Manager, which is John. And then other
22 members would be determined by the NRC staff as
23 appropriate based on the content of the information in
24 the petition.

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1 Tanya Mensah is the 2.206 Coordinator. In
2 addition, we have technical staff on the PRB. We also
3 obtain advice from our Office of General Counsel and
4 the Office of Enforcement.

5 Are there any questions for this meeting
6 over the phone on where we are in the process? And on
7 the purpose for this meeting?

8 MR. LEYSE: Not at the moment, no.

9 MS. GOLDER: Okay. Mr. Leyse, do you have
10 any general questions before we proceed?

11 MR. LEYSE: Yes, I do have a number of
12 questions.

13 MS. GOLDER: In general on the process, or
14 what?

15 MR. LEYSE: No, not in general on the
16 process.

17 MS. GOLDER: Okay. Okay, well let me just
18 finish and then --

19 MR. LEYSE: Certainly.

20 MS. GOLDER: Okay. So just quickly before
21 I finish, if you are going to speak, just make sure
22 you introduce yourself before you speak or when you
23 first speak up so we know who is speaking.

24 And at this time does anyone here at
25 headquarters have anything?

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1 MS. GOLDER: No.

2 MS. GOLDER: Okay. So, Mr. Leyse, go
3 ahead. If you'd like to address us, the floor is
4 yours.

5 MR. LEYSE: Okay. Thank you.

6 First I would like to introduce my
7 consultant, Robert H. Leyse. And let him discuss some
8 of his experience in the field of nuclear engineering.

9 MR. R. LEYSE: Okay. Robert H. Leyse.
10 I've been in this business since 1950 on several tasks
11 including the FLECHT tests that are referenced in
12 Appendix K. If you check ADAMS under Leyse, you will
13 find 172 entries. These include documents that I have
14 submitted to the NRC, related public comments, NRC
15 evaluations, and other diverse matters.

16 My succinct discussion of fouling in the
17 range of light water reactors over the decades may be
18 found on Google by entering unmet relap. That is U-N-
19 M-E-T R-E-L-A-P. You will find my slide presentation
20 to the 2003 RELAP5 Users Conference under the title
21 Unmet Challenges for SCDAP/RELAP5.

22 The impact of fouling on LOCAs or
23 reactivity insertion accidents has not been evaluated
24 although extensive fouling of fuel elements is
25 widespread in the U.S.A. and elsewhere. In the

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1 U.S.A., ultrasonic fuel cleaning has been applied at
2 some units. In Europe, chemical cleaning has been
3 applied.

4 The impact of fouling has not been
5 included in the wide range of international test
6 programs that address reactor accidents. The U.S.A.
7 FLECHT Program never covered this, LOFT did not, and
8 the present day work at Penn State does not.

9 I may update my 2003 presentation and call
10 it unmet challenges for TRACE. Anyway, there are more
11 examples that I would cite in such an update; however,
12 the bottom line is unchanged. And that is the end of
13 my presentation.

14 MR. LEYSE: And I, Mark Leyse, now I would
15 just, for clarification, when Robert H. Leyse
16 mentioned fouling, he is referring to crud. It's just
17 a semantic difference.

18 MS. GOLDER: Thank you for that
19 clarification.

20 MR. LEYSE: And I would like to ask a
21 couple questions now from the Petition Review Board.

22 MS. GOLDER: Go right ahead, sir. This is
23 Jennifer Golder. Go right ahead.

24

25

1 MR. LEYSE: Okay, Mark Leyse again.

2 Yes, I received an email from Mr. Boska on
3 May 10th which kind of mentioned some of the things,
4 that the Board proposes to deny revoking the operating
5 licenses for Indian Point's Units 2 and 3 and also
6 ordering the licensee to immediately suspend
7 operations at Indian Point's Units 2 and 3. And you
8 had mentioned that earlier in this same meeting.

9 What I'm wondering is are these decisions
10 based on any information that you have regarding the
11 current levels of crud at either Units 2 or 3 at
12 Indian Point?

13 MS. GOLDER: What information do you have?
14 Jennifer Golder, sorry.

15 MR. LEYSE: What information do I have?
16 Well, I have the information that since 1995, out of
17 68 PWRs, pressurized water reactors, there have been
18 three cases of crud-induced corrosion failures, which
19 means that in the United States since 1995, that would
20 be approximately a total of 816 PWR reactor years for
21 the total of 68 PWRs. There have been three cases of
22 crud-induced corrosion failures. So that is one case
23 every 272 reactor years.

24 So the licenses of Indian Point 2 and 3
25 are set to expire in 2013 and 2015 respectively. So

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1 that is a total of 14 reactor years left between the
2 two of them. So based on the fact that there has been
3 one of these cases of crud-induced corrosion failures
4 every 272 reactor years, that means the probability is
5 five percent that either plant will operate with this
6 cladding and fuel condition.

7 And 20 million people live and work within
8 a 50-mile radius of both plants according to a census
9 from 2000. So it seems that it is highly probable
10 that -- well, it is probable that this condition can
11 occur at either unit. So that is why I'm wondering
12 is your current decision based on any knowledge that
13 you have regarding current levels of crud at either
14 plant.

15 MS. GOLDER: this is Jennifer Golder. Mr.
16 Leyse, the PRB denied this request on the basis that
17 no factual information was provided in the petition
18 regarding Indian Point Units 2 and 3. Is there
19 anything specific to Indian Point that you -- any
20 information specific to Indian Point that you have?

21 MR. LEYSE: I began the petition with --
22 well, I didn't begin it -- starting on page 3, there
23 are facts constituting the basis for the petitioner's
24 request. And I discuss the calculations that you had

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1 for the ECCS evaluation. Actually, it is the ECCS
2 evaluation calculations.

3 And I illustrate clearly that such
4 cladding and fuel conditions were not modeled in those
5 calculations. So that is what I have for both of
6 those units.

7 The fuel that was modeled in those
8 calculations -- this is all in the petition -- was
9 beginning of life fuel.

10 MS. GOLDER: Okay, well, this is Jennifer
11 Golder. Thank you for the information you provided
12 us.

13 Is there anything else you would like to
14 -- any other information you would like to give us?

15 MR. LEYSE: Well, basically I just wanted
16 to -- Mark Leyse speaking again --

17 MS. GOLDER: Yes.

18 MR. LEYSE: -- I just wanted to clarify
19 that the Petition Review Board has made its decision
20 to not revoke the license or suspend the operations at
21 either plant without any knowledge of what the current
22 levels of crud are at either plant. That's correct?

23 MS. GOLDER: No. This is Jennifer Golder
24 again. Our initial decision was regarding the request
25 for immediate action. And that was it.

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1 MR. LEYSE: Okay. So you didn't base that
2 decision on any knowledge that you have regarding the
3 current levels of crud at either nuclear power plant?

4 MS. GOLDER: Again, this is Jennifer
5 Golder. The PRB denied the request on the basis that
6 -- for immediate action, excuse me. The PRB denied
7 the request for immediate action on the basis that no
8 factual information was provided in the petition
9 regarding Indian Point Units 2 and 3, and regarding
10 the amount of crud, in particular.

11 MR. LEYSE: Okay. So you didn't -- I
12 didn't provide you with factual information regarding
13 the current levels of crud at either units. So
14 that is your basis of denying the immediate action?

15 MS. GOLDER: Yes.

16 MR. LEYSE: The burden of proof is on me
17 in other words.

18 MS. LONGO: It's not so much the burden --
19 this is Jenny Longo speaking. It is not so much the
20 burden of proof. It is just that we have to make a
21 decision based on what we have. And you did not give
22 us specific information about crud at Indian Point
23 2 and 3.

24 MR. LEYSE: Okay, Mark Leyse again. Were
25 you able to contact Entergy and ask them what the

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1 current levels of crud at either unit is at the
2 moment? Hello?

3 MR. BOSKA: We are going to go on mute and
4 consider our response here. This is John Boska.

5 MR. LEYSE: Okay.

6 MR. BOSKA: Give us a minute.

7 MR. LEYSE: Sure.

8 MS. GOLDER: Mr. Leyse, this is Jennifer
9 Golder, the Petition Review Board Chair. Sorry to
10 keep you on hold for the few minutes.

11 MR. LEYSE: No problem.

12 MS. GOLDER: We have not gone to the
13 licensee. This is in response to your question. We
14 have not gone to the licensee and requested
15 information on the level of crud because you haven't
16 provided any sufficient information to warrant
17 inquiry. And additionally, the licensees are not
18 required to report that information.

19 If you have information specific to Indian
20 Point 2 and 3, this is an opportunity to bring that to
21 our attention.

22 MR. LEYSE: Okay, this is Mark Leyse
23 speaking again. Do you have any plan -- anything in
24 place for what would be done if it were discovered

1 that crud levels at either plant had become a safety
2 hazard?

3 MS. GOLDER: This is Jennifer Golder.
4 That is not the purpose of this phone call. The
5 purpose of this is for you to provide information to
6 us regarding Indian Point 2 and 3. Do you have
7 information for us regarding Indian Point 2 and 3, the
8 crud levels?

9 MR. LEYSE: Well, like I said before,
10 since 1995, there have been -- with PWRs, there have
11 been three cases of crud-induced corrosion failures.
12 And also, as I had mentioned, Indian Point's Units 2
13 and 3, the licenses are scheduled to expire in 2013
14 and 2015 respectively. And these are up for renewal
15 at the moment for I believe it is an additional 20
16 years each. Is that correct?

17 MR. BOSKA: Yes, this is John Boska, 20
18 years is correct.

19 MR. LEYSE: Thank you. Mark Leyse again.
20 Well, basically from this point in time, that would be
21 a total of 54 reactor years before both plants are
22 closed. And based on the track record of the last 12
23 years, since there has been a case of crud-induced
24 corrosion failure in every 272 reactor years, that
25 means that in 54 reactor years, there would be almost

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1 a 20 percent chance that either Indian Point's Units
2 2 or 3 will experience a crud-induced corrosion
3 failure situation.

4 So that's -- I think that is a pretty
5 important thing to take into consideration. I'm
6 providing information about and it is clearly
7 illustrated in the petition. I talk about Three Mile
8 Island, Unit No. 1 in detail.

9 This problem also occurred at Palo Verde
10 and Seabrook in recent years. It is pretty clear that
11 there could be a 20 percent chance that if both of
12 these plants have their license renewed that there
13 would be a problem. And that at that moment when they
14 would have such a problem, the current ECCS evaluation
15 calculations would not have factored in that problem.
16 So the power levels would be too high according to
17 that problem. And there would be a highly probable
18 chance that 10 CFR 50.46b would be violated in that
19 situation.

20 And as I said, in view of the fact that
21 both of these units are in a densely populated area,
22 I think that is something to be concerned about.

23 MS. GOLDER: Mr. Leyse, thank you for your
24 comments. Do you have any other comments you would
25 like to make?

1 MR. LEYSE: Yes, I do.

2 MS. GOLDER: This is Jennifer Golder
3 again. Do you have any other information you would
4 like to provide us regarding Indian Point's 2 and 3?

5 MR. LEYSE: Yes, I do. In the meantime,
6 I would also just like to ask a couple more questions.
7 You don't have to answer them but I'd just like to put
8 them out there. It might be something you might want
9 to think about when you are reviewing the petition.

10 It would be one, what would be done in the
11 event if a leaking fuel rod was detected? That is
12 that would be an off-gas leak or what is called a
13 leaker. And it was deemed that there was a
14 possibility that that fuel rod was leaking because of
15 a crud-induced corrosion failure.

16 MS. GOLDER: Okay. You had other
17 questions?

18 MR. LEYSE: Yes. The other one I would
19 like to add to that -- Mark Leyse again -- would be
20 would the fuel cycle be terminated in such a
21 situation? And would the leaking rod or any other
22 heavily corroded and/or crudded fuel rods be removed?

23 MS. GOLDER: Okay. And do you have any
24 other questions? This is Jennifer Golder.

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1 MR. LEYSE: Yes, I do. Now I just -- I
2 want to -- the reason I just asked these two questions
3 is this is a scenario that could very possibly occur
4 at either unit. And it would be a situation where
5 there would be a clear sign that there would be --
6 that it would be highly possibly that in the event of
7 a loss of coolant accident, that the parameters set
8 forth in 10 CFR 50.46b would be violated.

9 Now I do have a couple of other questions.
10 Let me see. Yes. I want to know if the NRC plans to
11 allow Entergy to continue omitting cladding and fuel
12 conditions, specifically the crud-induced corrosion
13 failure, I'm wondering if the NRC is going to continue
14 approving of any ECCS evaluation calculation that
15 Entergy conducts relating to either plant that omits
16 modeling such cladding and fuel conditions?

17 MS. GOLDER: This is Jennifer Golder.
18 Does that have to do with licensing?

19 MR. LEYSE: Yes, it does.

20 MS. GOLDER: We can't answer that. That
21 is out of the scope of this process.

22 MS. LONGO: You know the 2.206 -- this is
23 Jenny Longo speaking -- the 2.206 process does not
24 encompass licensing.

25 MR. LEYSE: I see.

1 MS. LONGO: Those actions are not
2 addressed in the 2.206 process.

3 MR. LEYSE: Well, Mark Leyse again, as you
4 had read earlier, one of the options that I gave in my
5 request for action was in the event of a temporary
6 shutdown for Indian Point's 2 and 3 that because the
7 plants are actually up for license renewal at the
8 moment, I requested that the reviews for the license
9 renewal of both plants would encompass conservative
10 ECCS evaluation calculations that would model
11 scenarios where one cycle fuel would have heavily
12 crudded and/or oxidized fuel rods or would have crud-
13 induced corrosion failures.

14 MS. LONGO: Mr. Leyse, this is Jenny Longo
15 again. The 2.206 process is an opportunity for
16 members of the public to request enforcement-type
17 action. And if you are going to ask that certain
18 actions be taken in the licensing process, it is
19 outside the 2.206 process.

20 When the licensee files a request for
21 license renewal, the public has an opportunity to
22 comment. And you will have an opportunity to comment.

23 MS. GOLDER: This is Jennifer Golder
24 speaking. Do you have -- Mr. Leyse, do you have any
25 other information particular to Indian Point's 2 and

1 3 or any other questions particular to that or the PRB
2 process?

3 MR. LEYSE: Yes, I do have some other
4 information that can be applied to Indian Point's
5 Units 2 and 3.

6 MS. GOLDER: Okay. Sir, this is Jennifer
7 Golder. We have 15 minutes left on the conference
8 call. So we need to start wrapping it up.

9 MR. LEYSE: Okay.

10 MS. GOLDER: What specific information do
11 you have on the Indian Point 2 and 3 ECCS and the
12 crud?

13 MR. LEYSE: Okay. Well, this is Mark
14 Leyse speaking again. Entergy, if any utility would
15 have experience with crud, it would actually be
16 Entergy. In recent years, they've had -- now these
17 are boiling water reactors. They have had two boiling
18 water reactors that have had crud-induced corrosion
19 failures, River Bend and Vermont Yankee. And I'm
20 going to tie this in with Indian Point.

21 Basically at the moment, Entergy has a
22 program -- I believe they are working on this with
23 EPRI, Electrical Power Research Institute, that they
24 are sampling some of the BWR crud flakes. And in an
25 article called Crud -- I'm sorry, the article is

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1 titled, Fuel Crud Formation and Behavior, Charles Turk
2 from Entergy states, methods developed to determine
3 the number and distribution of chimneys and
4 capillaries on fuel crud surface, essential in
5 understanding the adequacy of heat transfer within
6 crud deposits, have large applications for both PWR
7 and BWR fuel depositions.

8 So basically Entergy right now is working
9 on -- is studying some of the crud flakes that have
10 been taken from River Bend. And what I'm wondering is
11 do they plan to take some of that information that
12 they gather regarding heat transfer and the thermal
13 conductivity of crud and apply it to their ECCS
14 evaluation calculations for either Indian Point Units
15 2 or 3.

16 MS. GOLDER: Okay. Thank you for your
17 comments. This is Jennifer Golder. Do you have any
18 other questions or information particular to Indian
19 Point's 2 and 3?

20 MR. LEYSE: Well, another -- well, this is
21 isn't exactly particular -- Mark Leyse speaking again
22 -- this isn't particular to Indian Point's Units 2 or
23 3 but given the current trend as EPRI says that fuel
24 is -- actually I'm trying to find it in my petition --
25 fuel is being run more aggressively than ever before.

1 And that the overall industry fuel failure rate has
2 risen in the last couple of years as increased fuel
3 duty and new water chemistry environments have
4 presented increasing challenges to cladding integrity.
5 And you also have longer fuel cycles.

6 These issues seem very pertinent to both
7 Indian Point's Units 2 and 3. And like I said, if
8 they are going to re-license these plants, and there
9 will be a total of 54 reactor years of operation of
10 both of these plants, I believe this is something that
11 needs to be taken into consideration.

12 And I would also like to bring up one
13 other issue regarding River Bend, which is a boiling
14 water reactor that Entergy runs.

15 MS. GOLDER: Is that directly related to
16 your request, your petition request? Is this
17 information related to this? This is Jennifer Golder.

18 MR. LEYSE: Mark Leyse speaking. It is
19 related to it.

20 MS. GOLDER: Go right ahead. This is
21 Jennifer Golder.

22 MR. LEYSE: Thank you. Mark Leyse again.
23 The peak cladding temperature at River Bend in Cycle
24 8, and this is a question Entergy may want to answer
25 at a later point in time.

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1 The peak cladding temperature was
2 calculated for a large break loss of coolant accident
3 at 1,700 degrees Fahrenheit. Just to clarify, that is
4 for a computer simulation of a large break loss of
5 coolant accident. And the PCT was reported to be
6 1,700 degrees Fahrenheit.

7 And General Electric reported that during
8 the operation of Cycle 8 local cladding temperatures
9 approached 1,200 degrees Fahrenheit. So I'm wondering
10 if Entergy has reviewed its calculation and come up
11 with a new value for the PCT because 1,700 degrees
12 Fahrenheit seems like a low value for the PCT in this
13 case.

14 And I would tie that in to Indian Point
15 Units 2 and 3 because Entergy is running both of those
16 units also. And I'm wondering if Entergy is
17 investigating the effect of crud and integrating its
18 new findings of the low thermal conductivity of crud
19 and if it is going to apply those findings to its ECCS
20 evaluation calculations regarding Indian Point's Units
21 2 and 3.

22 MS. GOLDER: Thank you very much. Do you
23 have any other information? Jennifer Golder again.

1 MR. LEYSE: Well, just a few questions I
2 would like to put in the arena. It may be something
3 that Entergy would like to answer at a later time.

4 Do they plan to actually model crud-
5 induced corrosion failures in future ECCS evaluation
6 calculations for either Units 2 or 3 at Indian Point?
7 And do they continue -- or are they going to continue
8 omitting such crud and corrosion conditions?

9 And I guess this would be another question
10 directly to this panel, is the NRC going to allow
11 Entergy to continue omitting these conditions from its
12 models for its ECCS evaluation calculation?

13 MS. GOLDER: Okay. Do you have any other
14 questions?

15 MR. LEYSE: Well, I was -- that was -- I'm
16 wondering if you would be able to answer that question
17 at this time.

18 MS. GOLDER: This is Jennifer Golder
19 again. You had asked that already. And we had
20 already answered that.

21 MR. LEYSE: I thought I actually asked you
22 more of -- I asked you a question regarding the
23 current levels of crud and oxidation at Indian Point's
24 Units 2 and 3. I didn't ask you specifically if you
25 planned to allow Entergy to continue ECCS evaluation

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1 calculations where they would omit modeling conditions
2 where there are crud-induced corrosion failures.

3 MS. LONGO: This is Jenny Longo. I
4 believe, in fact, you did ask this question and we did
5 answer it. But let me recap it. We asked you if you
6 were talking about the licensing basis and about what
7 was going on with license renewal. And our answer to
8 you was that that is outside the scope of 2.206. And
9 you can address that and you can raise these questions
10 in the licensing process.

11 MR. LEYSE: Mark Leyse speaking again.
12 Okay, I remember that you had said that. Now what
13 about a situation where, as in recent years, there
14 have been power uprates at both plants, what about a
15 situation where they put in a request for a power
16 uprate?

17 MS. LONGO: What is your question about
18 power uprates?

19 MR. LEYSE: Well, when they do a power
20 uprate, they do the ECCS evaluation calculations as
21 they did in recent years for power uprates.

22 MS. GOLDER: This is Jennifer Golder.
23 Power uprates are part of the licensing process. So
24 that is outside the scope of the 2.206. I do want to

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1 point out that we have five minutes left on this
2 conference call so we do need to start wrapping it up.

3 Do you have any other information to
4 provide us specific to Indian Point's 2 and 3, the
5 ECCS, and the crud?

6 MR. LEYSE: I do not. This is Mark Leyse
7 speaking. No, I have no additional questions at this
8 moment. And I have no other additional information to
9 provide.

10 MS. GOLDER: This is Jennifer Golder.
11 Thank you very much for providing your information.
12 And at this time, if you have no more questions or any
13 information, does anyone here at headquarters have any
14 questions for this conference call?

15 (Chorus of nos.)

16 MS. GOLDER: Okay. I'd like to thank you
17 -- this is Jennifer Golder again -- I'd like to thank
18 the petitioners for taking time to provide the NRC
19 with the information. And with that I'd like to
20 conclude the meeting.

21 (Whereupon, the above-entitled
22 teleconference was concluded at 1:56 p.m.)

23

24