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RE Braidwood/Byron

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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10 CFR 2.206 PETITION REVIEW BOARD (PRB)

CONFERENCE CALL

RE

BRAIDWOOD/BYRON

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WEDNESDAY

MARCH 15, 2017

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The conference call was held at 1:00 p.m.,
Michael Case, Chairperson of the Petition Review
Board, presiding.

PETITIONER: SAMUEL MIRANDA

PETITION REVIEW BOARD MEMBERS

TIMOTHY DRZEWIECKI, Inspector Assistant
Engineer, Office of New Reactors

ERIC OESTERLE, Office of Nuclear Reactor
Regulation

JOSHUA BORROMEO, Reactor Systems Engineer,
Office of Nuclear Reactor Regulation

ROBERT BEATON, Reactor Systems Engineer,
Office of Nuclear Reactor Regulation

1 MERRILEE BANIC, Assistant Coordinator,
2 Office of Nuclear Reactor Regulation

3 SUMMER SUN, Office of Nuclear Reactor Regulation

4 JOHN BILLERBECK, Mechanical Engineer,
5 Office of Nuclear Reactor Regulation

6 SARA KIRKWOOD, Attorney, Office of
7 General Counsel

8 GLADYS FIGUEROA, Enforcement Specialist
9 Office of Enforcement

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11 NRC REGIONAL STAFF

12 JOE HARRIS, Engineer, Region III

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P R O C E E D I N G S

1:00 p.m.

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2
3 MR. WEIBE: Okay, welcome to everybody.
4 My name is Joel Weibe. I am the NRC Petition Manager
5 for Petition Sam, submitted on November 15th.

6 We are here today to allow the Petitioner,
7 Sam Miranda, to address the Petition Review Board
8 regarding the PRB's initial decision to recommend not
9 accepting the 2.206 Petition dated November 15, 2016.
10 The Petition Review Board's decision is based on
11 Management Directive 8.11, Part 3, Charlie Two Bravo.

12 The criteria for rejecting petitions under
13 10 CFR Part 2.206, and specifically, the Petitioner
14 raises issues that have already been the subject of
15 NRC staff review, and the issues have been resolved
16 for the Braidwood and Byron facilities. The PRB
17 determined -- also determined that significant new
18 information was not provided.

19 As part of the Management Directive 8.11
20 process, Mr. Miranda had requested this opportunity to
21 address the PRB regarding its decision. This meeting
22 is scheduled from 1:00 to 2:00 p.m., Eastern time.
23 The meeting is being recorded by the NRC Operations
24 Center, and will be transcribed by a court reporter.
25 The transcript will become a supplement to this

1 Petition. The transcript will also be made publicly
2 available.

3 I'd like to open this meeting with
4 introductions. The PRB Chair is Michael Case.
5 Michael is the Director of the Division of Safety
6 Research -- did I get that right this time?

7 In the Office of the Nuclear Regulatory
8 Research. I'd like the rest of the Petition Review
9 Board to introduce themselves. As we go around the
10 room, please be sure to clearly state your name, your
11 position, and the office that you work within the NRC.

12 MR. DRZEWIECKI: My name is Timothy
13 Drzewiecki. I'm an Inspector Assistant Engineer in
14 the Office of New Reactors in the Reactor Systems
15 Branch.

16 MS. FIGUEROA: Hi. Good afternoon
17 everyone. My name is Gladys Figueroa. I'm an
18 Enforcement Specialist in the Office of Enforcement.

19 MR. OESTERLE: Eric Oesterle, Chief of the
20 Reactor Systems Branch in the Nuclear Safety System,
21 in the Office of Nuclear Reactor Regulation.

22 MR. BORROMEO: Josh Borromeo, Reactor
23 Systems Engineer, the Reactor Systems Branch in NRI.

24 MR. BEATON: Robert Beaton, Reactor
25 Systems Engineer, Reactor Systems Branch in NRI.

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1 MS. BANIC: Merrill Banic, Assistant
2 Coordinator, NRI.

3 MR. SUN: Summer Sun (phonetic).

4 MR. WEIBE: Okay, are there any NRC
5 participants from headquarters on the phone?

6 MR. BILLERBECK: Yes, this is John
7 Billerbeck. I'm a Mechanical Engineer, Division of
8 Engineering, NRR.

9 MS. KIRKWOOD: Sara Kirkwood, OGC.

10 MR. WEIBE: Okay, and Dave you want to
11 introduce yourself?

12 MR. LOCHBAUM: Dave Lochbaum, with
13 (inaudible).

14 MR. WEIBE: Okay, is the court reporter on
15 the line?

16 COURT REPORTER: Yes, I'm here.

17 MR. WEIBE: Okay, if there are any
18 licensee personnel on the line, I would like each of
19 you to email me your name, position and organization.
20 And likewise for any members of the public online. It
21 is not required for members of the public to introduce
22 themselves, but if there are any on the phone that
23 wish to do so, email me with your name and
24 organization, if applicable.

25 My email is joel.wiebe@nrc.gov. Okay,

1 Mr. Miranda, would you introduce yourself for the
2 record.

3 MR. MIRANDA: My name is Sam Miranda, and
4 I'm a member of the public.

5 MR. WEIBE: Okay, I'd like to emphasize
6 that we each need to speak clearly and loudly, to make
7 sure that the court reporter can accurately transcribe
8 this meeting. If you do have something that you'd
9 like to say, please first state your name for the
10 record.

11 We also ask you to minimize any side
12 conversations during the meeting. We will try to have
13 only one speaker at a time. For those dialing into
14 the meeting, please remember to mute your phones to
15 minimize any background noise and distractions. If
16 you do not have a mute button, this can be done by
17 pressing the keys *6. To unmute, press the *6 keys
18 again.

19 And I guess I forgot to ask if there are
20 any regional office personnel on the line.

21 MR. HARRIS: Yes, Joel Harris, Engineer
22 from Region III.

23 MR. WEIBE: Okay. At this time I will
24 turn it over to the PRB Chairman.

25 MR. CASE: Okay, thanks Joel. Welcome to

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1 this meeting regarding the 2.206 Petition submitted by
2 Mr. Miranda. I'd like to first share some background
3 on the 2.206 process.

4 Actually, 2.206 of Title 10 to the Code of
5 Federal Regulations describes the petition process,
6 the primary mechanism for the public to request
7 enforcement action by the NRC in a public process.
8 This process permits the NRC to take enforcement-type
9 action related to NRC licensees or licensed
10 activities.

11 Depending on the results of its
12 evaluation, NRC can modify, suspend or revoke an NRC-
13 issued license, or take any other appropriate
14 enforcement action to resolve the problem.

15 The NRC staff guidance for the disposition
16 of 2.206 Petition request is in Management
17 Directive 8.11, which is publicly available.

18 The purpose for today's meeting is to give
19 the Petitioner an opportunity to comment on the PRB's
20 recommendation not to accept the Petition. This
21 meeting's not a hearing, nor is it an opportunity for
22 the Petitioner to question or examine the PRB on the
23 merits of the issues presented and the Petition
24 request.

25 No decisions regarding the merits of the

1 Petition will be made at this meeting. Following this
2 meeting, the Petition Review Board will hold an
3 internal meeting to consider the need to modify its
4 recommendation.

5 The final recommendations will be included
6 in an acknowledgment letter to the Petitioner. And
7 I'll just -- one thing that's not in the script. If
8 you look at 8.11, we're implementing a paragraph
9 that's under the part that says, Rejecting a Petition.

10 And so sometimes we choose very harsh
11 words. So it's not that the concerns that you have in
12 the Petition are not without merit. It's just that in
13 the process, some of these have already been
14 considered. So this is more the end of a particular
15 episode, but really there's other episodes that are
16 continuing in this particular area.

17 So it's not that what you have suggested,
18 Stan, is without merit. It's just that using the
19 criteria of the petition process, doesn't qualify as
20 a petition. So with that I will turn it over to you
21 and allow you to comment on the PRB's recommendation.

22 We appreciate -- it's like anything else.
23 We appreciate now the public giving us their
24 technical -- that's sort of my point.

25 MR. MIRANDA: Okay, well, last time I was

1 here, I supplemented my Petition with a long
2 statement. Okay, missed at least one new item that
3 was not in the Petition.

4 And I don't intend to go through the
5 Petition part by part. You have the Petition.

6 COURT REPORTER: I'm sorry to interrupt,
7 Mr. Miranda. This is the court reporter. I'm going
8 to have to ask you to speak up.

9 MR. MIRANDA: I'm sorry.

10 COURT REPORTER: Thank you.

11 MR. MIRANDA: I was saying that the last
12 time I was here, I had read a long statement -- took
13 about an hour and 15 minutes I think -- which was not
14 a reading of the Petition. It was supplemental, and
15 there was at least one item in there that was due, not
16 included in the Petition.

17 And I also provided two handouts, which
18 were in the supplemental statement I provided to Joel
19 Wiebe, which he included in the record. So you had
20 lots to read here, and I assume that you've read it.
21 So I'm not going to go through all of that again,
22 except maybe one or two technical points, which I
23 consider important.

24 And I also consider that these points by
25 themselves are necessary and sufficient to get the

1 Petition reviewed. There's no point in embellishing
2 that.

3 I would also point out a small observation
4 that of all the people in this room, I'm the only one
5 here not being paid to be here. I'm retired, and I
6 should be in Florida on the golf course.

7 UNIDENTIFIED SPEAKER: Especially on a day
8 like this.

9 MR. MIRANDA: I will point out one
10 paragraph in the benefit directive letter (phonetic).
11 It's under the section called, Office Directives,
12 Section 33. It says, have overall office practice,
13 have overall responsibility for assigned petitions,
14 because 10 CFR 2.206 Petitions are requesting
15 enforcement-related action.

16 Petitions are assigned to the Office of
17 Nuclear Reactor Regulation, the Office of Nuclear
18 Material, Safety and Safeguards, the Office of
19 Enforcement, or the Office of the General Counsel.

20 Therefore, most of the actions described
21 in this directive, and the associated handbook, apply
22 only to those offices.

23 So my question to you, Mr. Case, is, why
24 are you here?

25 MR. CASE: Because I'm the Petition Review

1 Board Chairman.

2 MR. MIRANDA: Did you hear what I just
3 read?

4 MR. CASE: Mm hmm.

5 MR. MIRANDA: So why are you here?

6 MR. CASE: Not to read the responsibility
7 to the Petition Review Board Chairman. So I'm here as
8 the -- I need the recommendation to Mr. Dean, and it's
9 Mr. Dean who responds. So we are fully compliant with
10 the goals and responsibilities defined in the
11 management directive. So really, when we respond,
12 it'll be Bill Dean that responds, not me.

13 MR. MIRANDA: Do you work for him?

14 MR. CASE: No.

15 MR. MIRANDA: But you know him?

16 MR. CASE: Yes. And so what -- just so
17 you understand the reasoning, the reasoning that Bill
18 used, is that he wanted somebody that was not already
19 involved in all the previous activities to do it. So
20 he was trying to get an independent look. So that's
21 why he picked me.

22 MR. MIRANDA: And you couldn't find anyone
23 else in NRR?

24 MR. CASE: They thought it was best that
25 they searched for somebody outside NRR, rather than --

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1 (Simultaneous speaking)

2 MR. MIRANDA: I will request for the
3 record that you put that in your response for an
4 explanation as to why you're finding that.

5 MR. CASE: Okay.

6 MR. MIRANDA: Because it is not consistent
7 with what's in the management directive which you just
8 quoted to. You know, the one that says my Petition is
9 rejected.

10 MR. CASE: Okay, continue on.

11 MR. MIRANDA: I would say I appreciate
12 your comments about my points having merit. I took
13 great care to make sure that my points were not
14 considered before. And I think the people here who
15 are familiar with these issues -- and I'm looking at
16 Summer and Josh here -- what's your name?

17 MR. BORROMEO: I'm Josh.

18 MR. MIRANDA: Oh you're Josh. I think on
19 reading the Petition and supplemental portion, I think
20 you will agree that there are a lot of new things in
21 there that were not considered before. And in fact,
22 the two handouts I provided last time I was here, I
23 know they were not considered before because I created
24 them.

25 And in fact, the little plot I gave you

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1 that showed how much flow was coming out of the
2 pressurizer relief valves, under water relief
3 conditions, was much, much higher than anything that
4 could be supplied by the emergency core cooling
5 system.

6 That took a lot of work. I didn't -- I
7 needed a critical flow correlation for that, which I
8 got out at Realat by the way, and adapted it for the
9 PC. And it was conservative. The flow that was
10 represented on that curve was saturated flow. Really,
11 it should be subcooled flow, and that would be at
12 least 150 percent higher. And I know this was not
13 considered before.

14 So my reasoning here is that in order to
15 reject -- in order to reject a petition like this,
16 which has at least 12 errors, and probably as many
17 omissions, most of which are new, to reject a petition
18 like this, if you are truly concerned with protecting
19 the public health and safety, you would need to verify
20 that each and every one of them has been considered
21 before, and has been resolved.

22 If there's even one that has not been
23 considered or resolved, you need to consider the
24 Petition. I object strenuously. You're rejecting the
25 entire Petition because of this overall -- I don't

1 know what to call it -- a standard form letter that
2 says, oh we haven't found anything new or significant.

3 Well I can tell you that there are things
4 in there that are new and significant, including the
5 creation of a new accident. And add the regression
6 and safety margin, and the filing under oath and
7 affirmation of, no significant safety hazards
8 evaluations, that were false, and I would say these
9 statements are not only false, they're lies, because
10 the people who made these statements -- and I'm
11 referring to the Exelon engineers and executives --
12 should have known better.

13 They willingly did this. It's not just a
14 typo, because I've seen these no-significant-hazards
15 evaluations. They always supply license amendment
16 reports, and they all seem to magically come to a
17 conclusion that there is no significant hazard. And
18 there's lots of explanations as to why, and most of
19 them make sense. But in this case, they're just
20 wrong, and I think that requires an enforcement
21 action.

22 And I suggested some enforcement actions
23 in this Petition which I think were reasonable. I'm
24 not asking for the shutdown of these plants, although
25 I believe that probably these plants should not have

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1 been licensed in the first place considering the
2 licensing basis that's available today.

3 Well let me go back to this curve I
4 referred to, because I'm rather proud of it. It took
5 a lot of work. And then there will be here -- I will
6 also talk on the other hand, also in a way that
7 perhaps you haven't heard before.

8 So you recall this curve, and this refers
9 to the statements that Exelon made in their SSAR,
10 which said -- and this is directly from the SSAR --
11 since the cause of the water relief is the ECCS flow,
12 the magnitude of the leak will be less than or
13 equivalent to that of the ECCS. That is, operation of
14 the ECCS maintains RCS inventory during the postulated
15 event and establishes the magnitude of the subject
16 leak.

17 So if this is true, then there is no
18 accident here. There's nothing to analyze. There's
19 the event, the inadvertent actuation of these
20 currently, to fill in the pressurizer, and currently
21 to discharging water for the relief valves, and
22 currently to the relief valves sticking open, and the
23 resulting flow is no more than the leak. Therefore,
24 the accident has not progressed to a more severe
25 event.

1 There's no need to provide any further
2 information in the SSAR. The evaluation is done. But
3 you can see from this curve that it's not true.
4 According to Exelon, the reactor -- the pressurized
5 water reactor that they're operating in Illinois --
6 actually the Ford plant used to produce a lot of
7 electrical power -- these plants can be modeled by the
8 coffee cup.

9 You pour coffee into the cup, you keep
10 pouring it, eventually coffee overruns the brim of the
11 cup, and then from the saucer. The flow of coffee
12 into the saucer is exactly equal to the flow of coffee
13 coming out of the coffee pot, and into the cup. This
14 is the coffee cup model.

15 We're talking about a pressurized water
16 reactor at 2250 PSI, with no mention of critical flow.
17 So according to Exelon, this is just a leak. No loss
18 of coffee accident.

19 So this is another interpretation of their
20 licensing basis. Well actually there are two. This
21 interpretation explains it all. Explains why they
22 don't do the analysis. They don't have to. They've
23 explained it. They don't do the analysis that shows
24 the event will not become a more serious event. They
25 do an analysis to show that the event will not

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1 overpressurize the reactor cooling system. That's the
2 one where they open the safety valves.

3 And that is a conservative analysis. They
4 don't say it was not necessary to do that analysis,
5 because the charging pumps in question have
6 pressurized the reactor cooling system, simply don't
7 have the head to pressurize the reactor cooling -- the
8 pressures higher than the safety limit.

9 So that analysis was also not necessary.
10 They could have just written a couple of sentences to
11 that effect. So when they do such analysis, the
12 reviewer would have to look at that and question
13 whether or not Exelon knew what they were doing, and
14 whether they should be operating the power plant. Do
15 they know what kind of equipment they're running?

16 The same thing with the DNV analysis.
17 That's another requirement for this event. There must
18 not be any spill damage. So they do an analysis, and
19 in this case, it's conservative to assume that the
20 pressurizer power-operated relief valves open to keep
21 the pressure down, because that's conservative for
22 fuel cell margin. You keep the power high and the
23 pressure low. But one of the consequences of an
24 inadvertent ECCS actuation, is an immediate reactor
25 trip that's part of the sequence. It happens every

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1 time there's an ECCS actuation.

2 So the reactor trips at time zero. There
3 is no possibility of damaging any fuel. They should
4 know this. They should just say so. Why do they do
5 an analysis. We have curves in the licensing basis of
6 the interim DNV ratio, that somehow never dropped
7 below the initial value.

8 Well, I wonder why? You can't damage the
9 fuel if you're not generating power. So if your
10 objective is to protect public health and safety, then
11 why didn't you ask questions like this?

12 So my position is that maybe my points
13 have merit, but if there's even one point in there
14 that hasn't been considered and resolved, the Petition
15 needs to be reviewed. Just one. And I gave you one.
16 I can give you more.

17 Thank you. If, on the other hand, your
18 objective is to process the paperwork and get it off
19 your agenda, then just go ahead and reject it. Just
20 process this just like a lot of other petitions I've
21 seen processed.

22 There's another point which I made the
23 last time, with another curve. This is not technical
24 at all. This is simple logic. You remember this
25 curve? This relates to a design requirement that was

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1 established in 1973, and the licensee committed to
2 meeting it. All licensees committed to meeting it.
3 It makes sense.

4 It says, AOO -- Anticipated Occupational
5 Occurrence, AOOs -- shall be accommodated with. Shall
6 be. Legalese. That means it's required -- shall be
7 accommodated with, at most, the shutdown of the
8 reactor, with the plant capable of returning to
9 operation after corrective action.

10 I'm not going to worry about the plant
11 being capable of returning to operation after
12 corrective action, because that is subject to a
13 variety of interpretations. But the first part is
14 explicit.

15 So what happens? An AOO has to be
16 accommodated with, at most, a shutdown of reactor. So
17 here we have this curve. You see the red line on the
18 curve? This 2400 PSI. This is the high-pressure
19 reactor curve set point.

20 If you get to the right of that curve, if
21 the pressure gets above 2400 PSI and you have to open
22 the safety valves -- which open, by the way, at 2500
23 PSI -- this is no longer an AOO. It's something else.
24 It's something worse. You've gotten to a place where
25 you violated this requirement.

1 So to put it simply in logical terms, if
2 this is an AOO, it'll be accommodated with a reactor
3 trip. Do you agree with that? Does anybody agree
4 with that? If A, then B. If it's an AOO, then B,
5 it's accommodated with a reactor trip. This is what
6 the standard says, it's 1973.

7 If it's an AOO, you can deal with it with
8 a reactor trip. Is that true?

9 MR. CASE: I turn to my technical friend,
10 generally true.

11 UNIDENTIFIED SPEAKER: He never says --

12 MR. MIRANDA: Is it true? If a -- if it's
13 an AOO, then B, it's accommodated with a reactor trip.
14 That's the premise.

15 UNIDENTIFIED SPEAKER: Proceed on topic.

16 MR. MIRANDA: That means let me go to the
17 next part then. If the premise is true -- if A, then
18 B -- then the contrapositive is also true -- if not B,
19 then not A. If it can't be accommodated with a
20 reactor trip -- for example, by opening the safety
21 valves -- if it can't be accommodated with a reactor
22 trip, then it's not an AOO. If it's not an AOO, then
23 what is it?

24 It has to be either a Condition 3 or a
25 Condition 4 event. There's nothing else that's

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1 possible. You've violated the criterion. If you're
2 opening a safety valve, you've violated the criterion.
3 That's the end of that analysis. The licensee has not
4 met its obligation to meet its design requirement.

5 So -- I've seen a lot of discussion. I've
6 seen a lot of consideration when I was working here,
7 and after I left, actually. A lot of people -- a lot
8 of smart people -- worrying about whether the safety
9 valves could be qualified for water relief. And my
10 question is, maybe they can, although I haven't seen
11 anyone successfully do it, and that includes Exelon.

12 Maybe they can, but it doesn't matter,
13 because these valves are not going to be used to
14 respond to an AOO. If you're opening these valves,
15 you've already violated the escalation criteria.

16 But it doesn't matter to me. These
17 valves, by the way, are -- since they are designed to
18 operate, they're designed to open when the RCS reaches
19 its design pressure, 2500 PSI. And they're designed
20 to keep the peak pressure to below the over-pressure
21 limit, which is 110 percent of RCS design pressure, at
22 2750. And these are big valves, and they do the job
23 very well by relieving steam.

24 And they're qualified to relieve steam.
25 They will open, you will see, and prevent

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1 overpressure. That's their design requirement and
2 they do it well. But they only do this maybe once in
3 a plant's lifetime, because that's about as often as
4 you're going to get a Condition 3 event. A
5 Condition 4 event should not happen at all.

6 So these valves open once. In a car,
7 these valves would be airbags, and the pressurizer,
8 power-operated relief valves, would be seatbelts. You
9 use the seatbelts everyday. They protect you in the
10 rough stops or in fender benders. But those airbags?
11 You use them only once. The safety valves are used
12 only once.

13 They don't even need to be -- they don't
14 even need to recede. They've accomplished their
15 safety function by opening and keeping the pressure
16 below the overpressure limit. That's it. They're
17 done. They can stay open. Do you have a locum? Sure
18 you do. It can be as big as a three-part, seven-inch
19 brake. Hot leg brake. That's what these -- these are
20 Crosby M orifice valves. Their flow area is 3.6 square
21 inches times three. That amounts to about 3.7 inch
22 diameter brake, hot leg. Do you care? You're already
23 into a Condition 4 event. You've got other things to
24 worry about.

25 So for Exelon to come in to make a license

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1 amendment request for a power upgrade, and represent,
2 or to offer more information that they're protected by
3 pressurizing safety valves, just doesn't make sense.

4 They made a mistake, the NRC staff made a
5 mistake in approving it, and the NRC staff tried to
6 correct its mistake. They were prevented. I mean
7 that's --

8 So I would say probably the power-operated
9 relief valves are -- they are a control-grade system,
10 and a lot of people have made the mistake of assuming
11 that control-grade systems don't operate in a safety
12 analysis. That's not always true. They do operate
13 when it's conservative, in the DNV analysis.

14 As I said before, you need to keep the
15 pressure low and the power high. That degrades the
16 thermal margin. To keep the pressure low, reduce the
17 power-operated relief valves. We also use a
18 pressurizing spray. 1260. It's both sides, by the
19 way. That's got three power-operated relief valves.

20 These plants are referred to as full-load
21 rejection plants. They are capable of keeping the
22 reactor online if the turbo trips at full power. They
23 have utmost relief capacity, and steam.

24 So as I said, I'm not going to go through
25 everything again. You've seen it. You've read it.

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1 So that's my position. If there's anything in here
2 that has not been seen before, that has not been
3 considered and resolved, then you need to go back and
4 review this Petition.

5 Now if it's true that you have reviewed
6 everything, considered it, and resolved it, then I
7 would want to see each and every one of my points --
8 and I believe there's something like 12 errors, and
9 maybe another seven or eight omissions -- I want to
10 see evidence of that. I want to see an Adams
11 reference. Yes, we considered this and this is the
12 way we resolved it.

13 And I can tell you, just from the chart's
14 licensing basis, which I have in front of me, that
15 that little curve I showed you is the -- it showed the
16 flow coming out of the pressurizer was much, much
17 higher than the flow going into it, and that's based
18 upon the statement that Exelon made in SSAR, that it's
19 defined as a leak. I can read it again, but you know
20 what it is.

21 That statement -- I'm looking it right now
22 in Revision 15 of their SSAR, it's right here, it's
23 dated December 2014. So how did you resolve this? I
24 think you go back to Exelon and say, well no, the
25 staff doesn't agree with this statement, and if this

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1 statement is not true, you're going to have to do an
2 analysis. You've going to have to show compliance
3 with the design requirements. You're going to have to
4 do an analysis of the inadvertent ECCS system
5 actuation.

6 You have to do that analysis using force,
7 assuming the pores open, because a pore that doesn't
8 open can't fail open. That's a convenient way to show
9 that the pore is not going to fail open. Just don't
10 assume it opens. This is begging the question, which
11 I mentioned last time, is it circular reasoning?

12 And I'm surprised that the NRC staff could
13 accept this. You don't need to be an engineer to see
14 this. Anybody with some level of literacy can see
15 this. You can't assume the outcome. AOO doesn't mean
16 assumed outcome outcome. You have to open that port,
17 and they show it won't stay open.

18 Generally, this has been done by many
19 licensees, by showing that when the ECCS system is
20 actuated, it fills the pressurizer at a rate that
21 takes more than ten minutes to fill the pressurizer,
22 and ten minutes has been accepted by the NRC as
23 sufficient time for the operator to diagnose the
24 condition, and then go ahead and shut off the ECCS
25 flow.

1 But some plants had trouble meeting that
2 ten minute time requirement. So they've done other
3 things, and -- if a plant can't meet that ten minute
4 requirement, it might have to do some kind of hardware
5 modification, and the one I've seen used most often is
6 to qualify the pores for the water filter.

7 And I can -- I know it because six plants
8 that have done this -- it's not a very hard thing to
9 do. I've done it myself. I've worked as a contractor
10 at Salem in 1996 and '97, wherein they qualified their
11 relief valves for water leak. I was involved in that.
12 I wrote the license amendment request. It was
13 approved by the NRC in 1997.

14 Salem, today, can go ahead and state that
15 they have met the design requirement upon
16 installation. They can go ahead and open those pores,
17 pass water through them, and then assume that they'll
18 recede properly, because they're qualified to do that.
19 Those pores are qualified for water relief. They
20 discharge piping downstream of the pores. It's
21 qualified to support the weight of water passing
22 through them. Their lock valves are qualified to stop
23 water flow.

24 Their automatic control-system circuitry
25 has been upgraded to Class 1-E. They've removed all

1 of the single point failure vulnerabilities. And they
2 verified that they have sufficient power -- this would
3 be either air or electric -- they have sufficient
4 power to stifle those pores as many times as
5 necessary.

6 And Salem did this, by the way, because
7 they had two events in 1994, where they filled the
8 pressurizer, and passed water through, and cycled them
9 more than 200 times. They were fined for this. So
10 they took this measure in '97 to qualify those pores.

11 Diablo Canyon qualified those pores.
12 Lipscomb qualified their pores. I think Callaway did
13 as well. And along comes Exelon, and they say, well
14 we're not going to use our pores, we're going to use
15 our safety valves, and they're qualified for water
16 relief. And yet -- and in every test show that, re
17 ference XYZ, which they specified -- it was cited in
18 their license amendment request.

19 I looked for that. I found that report.
20 That report explicitly stated, Inspection 4.2.3, that
21 those tests were not done. They said -- it said so in
22 the report, it was not necessary to do those tests.

23 They didn't do them, because at that
24 time -- it was in the '80s -- Exelon was calling that
25 their pressurizer would fill any sinker than about 20

1 minutes.

2 So there was plenty of time for the
3 operator to shut off the ECCS flow, prevent the
4 pressurizer from filling, and thereby guaranteeing
5 that any flow through those pores would be only steam.
6 And with only steam relief, those pores can be relied
7 upon to recede. There would be no development of a
8 more serious event.

9 And for your information, Diablo Canyon
10 tried to go this way as well. They tried to qualify
11 their safety valves for water relief, and found that
12 tests would not support their approach. The water
13 being relieved was just too cold, so the valves were
14 not qualified for water relief. They withdrew their
15 license amendment request, and instead qualified to
16 relief valves. That's on record too.

17 So all of this work that the NRC has been
18 doing to help Exelon qualify their safety valves for
19 water relief, is not relevant in the slightest. It
20 doesn't matter what those safety valves do, you're not
21 supposed to -- period.

22 So that's all I have to say.

23 MR. CASE: Okay, thanks for that. I took
24 some notes, so we'll take a look at those things. At
25 this time does the staff here at headquarters have any

1 questions for Mr. Miranda?

2 MR. BILLERBECK: So this is John Borromeo.
3 So Sam, you're familiar with the Byron/Braidwood fact
4 sheet, all the documentation association with that
5 leak. Can you discuss a little bit -- what is the
6 difference between your 2.206 and the Byron/Braidwood
7 fact sheet that's out there now?

8 MR. MIRANDA: Good question. I was
9 careful when I wrote that 2.206 not to mention the
10 fact sheet. I wanted the 2.206 to stand alone as an
11 enforcement action. So as it stands -- as the current
12 situation is, Exelon is considered by the NRC --
13 thanks to the EDO's decision -- is considered by the
14 NRC to have complied with the no-escalation design
15 requirement.

16 So in terms of licensing, they've been --
17 basically they've been given a pass. Okay? The 2.206
18 Petition that I wrote shows that that pass was not
19 justified. The decision was wrongly made, because
20 there was -- the licensing basis was rife with errors
21 and omissions.

22 And that at the basis of the statement of
23 considerations lurking on in re: 1409, that says, well
24 the NRC can't just propose a compliance backfit
25 because it changed its mind, or its position, and to

1 go this way, rather than that way.

2 No, they have to find errors, either in
3 the licensing basis -- errors made by the licensee --
4 and regrettably, sometimes errors made by the staff,
5 and they need to be corrected. And that's what the
6 Petition 2.206 does. It shows every part of that
7 licensing basis that was deficient.

8 Sometimes there were analyses that were
9 missing, and sometimes there were analyses that were
10 just wrong, and I gave an example of that last time I
11 was here. They have a statement event in this SSAR,
12 and I'm looking at it right now. The statement says,
13 oh we don't need to look at this inadvertent ECCS
14 actuation event because that's already been analyzed
15 as well in the SSAR.

16 That approach is -- by the way, that
17 approach is quite valid. It's mentioned in Reg. Guide
18 1.70. You don't have to analyze every sub-case of
19 every case. If you can envelope cases, that's fine.
20 But in this case, what Exelon did was point to another
21 Reg. Guide 1.70 analysis.

22 It's in standard content and format of
23 SSAR for inadvertent see -- no, for ECCS
24 malfunction -- chemical volume and control system
25 malfunction. Okay?

1 This is another mass addition event that
2 should be analyzed in Chapter 15.5, I think. But
3 there are two cases here, and it's mentioned twice in
4 Reg. Guide 1.70. Once was a mass addition event,
5 which builds the pressurizer, and causes the relief
6 valves to open and pass water, leading to the more
7 serious event. And then in another section of Reg.
8 Guide 1.70, the same event was evaluated as a
9 reactivity anomaly.

10 And this is when the CDCS malfunction
11 inserts clean water into the reactor cooling system,
12 and causes a reactivity insertion. That's a
13 completely different analysis. It's not done with the
14 same computer codes, it's not done according to the
15 same criteria, it has nothing to do with the mass
16 addition event.

17 Exelon, nevertheless, puts it into their
18 SSAR as a bounding event, and the NRC staff accepted
19 it.

20 MR. BILLERBECK: And that's a delta from
21 your original backfit on the reactor systems event,
22 that something different in a petition, that's not in
23 the original backfit that was created from NRR.

24 MR. MIRANDA: Correct.

25 MR. BILLERBECK: I guess that's what I'm

1 trying to drive at, it's like --

2 MR. MIRANDA: Yes.

3 MR. BILLERBECK: -- what's the difference
4 from an original backfit, and a 2.206?

5 MR. MIRANDA: I mentioned this case in --
6 I think in a draft of a RIS, for example.

7 MR. BILLERBECK: Okay.

8 MR. MIRANDA: It was not mentioned in this
9 last 2.206 Petition. That's why I brought it up. I
10 said, this is something new, I brought it up the last
11 time I was here. But it's common. I've seen other
12 licensees do the same thing. It indicates to the
13 reviewer, that they really don't understand what's in
14 Chapter 15. They don't know why these analyses are
15 done, and what the referenced criteria are, which I
16 think -- if I were reviewing -- insert here by the way
17 is still in here. It's in the same revision --
18 December 2014. It's still in here.

19 So why is it there? The reviewers ought
20 to be asking basic questions of, other licensees that
21 does it. The questions you might ask an operator when
22 he's taking his license exam, do you know your plant's
23 design, what equipment you're operating, and what's
24 precautions you need to take? Again, I did not ask
25 for this test to shut down, but these things need to

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1 be corrected.

2 MR. BILLERBECK: Sam? How about this one?
3 Are you aware of any testing that has occurred, in
4 essence, since the backfit appeal, that would indicate
5 how SRVs would actually operate under water
6 conditions?

7 MR. MIRANDA: As far as SRVs?

8 MR. BILLERBECK: Yes. SRVs -- sporks,
9 or -- the Safety Relief Valves.

10 MR. MIRANDA: Safety relief valves. Okay.
11 Since the appeal? No. These test valves, they go
12 back to the '80s. They go back -- a lot of them were
13 done in response to Three Mile Island.

14 And from test results I've seen, they go
15 back, they were concentrated on relief valves testing,
16 and there were also some safety valve tests. But
17 those safety valve tests were different. Those safety
18 valve tests were designed to model a feedline break,
19 which would produce a much hotter flow -- hot water
20 flow -- through the valves, because the typical
21 feedline break analysis in Chapter 15 will show that
22 the safety valves open underneath water.

23 And that's okay, because when you're in a
24 Condition 4 event, where are you going to escalate to?
25 Condition 5? It's what happens during a feedline

1 break. It's -- Condition 4's not supposed to happen
2 anyway. Then you have -- you have other things to
3 worry about. You're evacuating the exclusion zone,
4 and the feedline break.

5 But there were some tests that go back to
6 the '80s, testing safety valves under feedline break
7 conditions.

8 MR. BILLERBECK: but no new information
9 that you're aware of?

10 MR. MIRANDA: No.

11 MR. BILLERBECK: Okay. Are you aware of
12 any events that have occurred since the backfit
13 appeal, that would illuminate how plant response would
14 be for an inadvertent operation of a POR?

15 MR. MIRANDA: I'm not aware of any -- I
16 haven't been following it, so I'm not aware of any
17 recent events, but there are plenty of events in the
18 operating history that show inadvertent ECCS
19 actuations. Okay? It's the second most common event
20 after the reactor trip.

21 And sometimes, even a reactor trip will
22 cause a safety system actuation that's not necessary.
23 It's called a trip with complications. So it's very
24 common. And usually it doesn't amount to much, and
25 there's a difference here that probably we should take

1 note of.

2 There's IRL -- In Real Life, IRL -- and
3 there's licensing space, and in licensing space, a
4 pressurizer power-operated relief valve, or any valve,
5 that's not designed for water relief, if it opens and
6 removes water, it's a (inaudible).

7 In real life we saw that, for example, in
8 1994 when Salem had those two events, their relief
9 valves opened to relieve water from the (inaudible).
10 Also in real life, we saw them debate, especially into
11 the relief valve opened and relieve steam, and stuck
12 open.

13 And we see that very often in the
14 operating experience. I saw that very often with D&W
15 design plants, Three Mile Island, especially. Exelon,
16 by the way, operates Three Mile Island, Unit 1.

17 So in the real world, a relief valve that
18 opens for any condition, it's a spurious opening, or
19 it's loss of load, or a turbine trip, or loss of
20 feedwater, anything that causes the primary system to
21 heat up and pressurize to a level that will open the
22 relief valves, that could be enough to cause a relief
23 valve to stick open. But that's not something you can
24 analyze for.

25 In the real world, by the way, the best

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1 example I think I have would be the Beznau incident,
2 which happened in 1974 in Switzerland, and there they
3 had a turbine trip. Beznau is a -- the unit that has
4 two turbines. One of the turbines tripped. Well
5 that's equivalent to a 50 percent load rejection.

6 A 50 percent load rejection ought to be
7 able to -- a plant ought to be able to tolerate that
8 without tripping. It should be able to reject 50
9 percent of a load. In this case it didn't. It
10 tripped, and the pressurizer pressure went up, and the
11 relief valve opened, and it may have relieved water,
12 or just steam.

13 It's not really known exactly what came
14 out of the valve. But the point is, that the valve
15 stuck open, and the operators of Beznau realized the
16 valve was stuck open, and he closed the blocked valve.

17 So they -- in the real world, that's what
18 you would do. You would close the blocked valve. But
19 as I said in the RIS of 2005, Westinghouse was
20 advising its customers that opening a blocked valve --
21 or opening a relief valve and having it stick open is
22 not a concern, because you can always close the
23 blocked valve.

24 Well that's true. In the real world,
25 that's what operators would do. They would close the

1 blocked valve. However, if you're closing the blocked
2 valve, you're not mitigating an inadvertent ECCS
3 actuation. You are mitigating a local. It's proof
4 that you've already violated the criteria.

5 MR. CASE: Any other questions?

6 UNIDENTIFIED SPEAKER: Here.

7 MR. CASE: How about any headquarters
8 staff on the phone have any questions for Mr. Miranda?
9 Okay, you have questions? Oh wait a minute.

10 MR. BILLERBECK: I say no questions. This
11 is John Billerbeck.

12 MR. CASE: Thanks. How about the regions?
13 Any questions from the regions? Okay, good. How
14 about the -- the licensees are not on the line, right?

15 UNIDENTIFIED SPEAKER: They might be.

16 MR. CASE: Okay. How about the licensee?
17 Any questions from the licensees? Okay, we have a few
18 people from the public before I conclude the meeting.
19 Member of the public may provide comments regarding
20 the Petition, and ask questions about the petition
21 process.

22 Whatever was stated at the opening, the
23 further intention is to provide an opportunity for the
24 Petitioner or the public to question or examine the
25 PRB regarding the merits of the Petition request.

1 Go ahead Dave. All right.

2 MR. LOCHBAUM: I've got a question and a
3 couple of observations.

4 MR. CASE: Okay.

5 MR. LOCHBAUM: Do you have a ballpark
6 timing for the NRC response letter to Mr. Miranda?

7 MR. CASE: I don't know. I guess you
8 could --

9 (Simultaneous speaking.)

10 MR. WEIBE: It will take us a while to get
11 the transcript back. Then we have to take a look at
12 the transcript, meet as a PRB, a lot depends on the
13 consensus of the PRB, and if we're in alignment on
14 whatever that decision may be. So I would say we
15 probably can come to that decision in about three
16 weeks, and then maybe another couple of weeks to get
17 the document out. So I would estimate at this point
18 it'd be five weeks ballpark.

19 MR. LOCHBAUM: Thank you. I would echo a
20 point that Mr. -- Mr. Bannister's punch letter said he
21 explicitly expressed that the reason for rejecting it
22 is because it's no new information that you explicitly
23 go to, to find Mr. Miranda's Petition, and show where
24 that has been addressed, without making the argument,
25 because I don't know if you're aware, the Inspector

1 General is initiating an audit of the 2.206 process.

2 And hopefully soon Mr. Miranda's Petition
3 that we find in new information that the rejection
4 letter hadn't explained or addressed. We're going to
5 go to the Inspector General and say they didn't follow
6 the process. We might do that anyway, but what we
7 could definitely do that, at a meeting with IG next
8 Monday.

9 But I don't expect a letter by next
10 Monday, but that audit is just starting. So we can
11 inform them.

12 MR. MIRANDA: Just to be accurate, the
13 criteria is, new and significant information. So
14 that's the cri- -- so it's bull. And so we do go
15 through the Petition with the famous fine-toothed
16 comb, looking for new. It has to be new and
17 significant.

18 MR. WEIBE: Any other comments? Keep them
19 coming Dave. You're good.

20 MR. CASE: Explain what we're looking for
21 and what we'll do, because I don't see it.

22 MR. WEIBE: Okay.

23 MR. MIRANDA: And let me say this about
24 significant, because I know significant is one of
25 those subjective terms that, the definition depends on

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1 who you ask. So all I can say is, when you look at
2 5092 --

3 (Telephonic interference)

4 -- significant, look at 5092, where you're
5 supposed to write something for the no-significant-
6 hazards evaluation. So if, as I have done in the
7 Petition or enforcement, if I have found a case where
8 there could be a significant hazard -- okay, in other
9 words, if you can't answer, no, to the three questions
10 that are 5092, then that's significant. If there's a
11 reduction in safety margin, or if there's an increase
12 in probability, or if there's a new accident, those
13 are all significant. And if that's the case, then you
14 answer, yes, to those appropriate questions. And so
15 by definition, that's significant.

16 MR. WEIBE: Any other questions? Any
17 seconds? Lee, how's everybody doing? Okay.
18 Everybody okay? Okay. Thanks --

19 MR. LEWIS: Marvin Lewis, member of the
20 public.

21 MR. WEIBE: I'm sorry. Go ahead.

22 MR. LEWIS: I'm sorry, I had it on mute
23 and I didn't even know it. All right look. First, my
24 thanks for Sam Miranda for bringing all this forth.
25 Secondly, I'd sure like to get on an email list so I

1 know when the paperwork is generated about this
2 Petition. My email is marvlewis@juno.com. Marv Lewis
3 at Juno.com. Please tell me -- keep me informed of
4 all paper generated on this issue. Thank you.

5 MR. WEIBE: Yes, Marv could you go over --
6 yes, you went fast. After the @ what's your --

7 MR. LEWIS: Oh. Marv Lewis at Juno,
8 J-U-N-O. God, it's not the city in Alaska, dot com.

9 MR. WEIBE: Okay, got it. Thank you.
10 Okay, Sam, thanks for taking the time to provide us
11 with clarifying information on the Petition. Before
12 we close, I need to check with the court reporter to
13 see if there's any additional information for the
14 meeting transcript that you need.

15 COURT REPORTER: Hi. Yes, if you could
16 just email me the list of participants once you've
17 received that information, that would be a huge help.

18 MR. WEIBE: Okay, will do.

19 COURT REPORTER: Okay.

20 MR. WEIBE: Okay, thank you. With that,
21 the meeting is concluded, and we'll be signing off on
22 the phone. So thanks for coming everybody, and you're
23 welcome to go over to the rig.

24 (Whereupon the above-entitled matter went
25 off the record at 2:06 p.m.)

CERTIFICATE

This is to certify that the attached proceedings
before the United States Nuclear Regulatory
Commission

Proceeding: 10 CFR 2.206 Petition Review Board RE
Braidwood/Byron

Docket Number: N/a

Location: Teleconference

were held as herein appears, and that this is the
original transcript thereof for the file of the
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