United States Nuclear Regulatory Commission Official Hearing Exhibit

 In the Matter of:
 Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)

 ASLBP #: 07-858-03-LR-BD01
 Docket #: 05000247 | 05000286

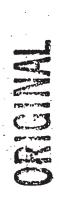
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Rockville, Maryland

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1	is provided by the licensee. And as licensee said, it
2	is more in the they used CHECWORKS. It's a
3	computer program that considers hydrodynamics, heat
4	balance, temperature in particular.
5	As you can see the predictive method is
6	conservative considered to actual measurement.
7	DR. FORD: I'm sorry. Could you explain
8	that?
9	MR. TSAO: Okay.
10	DR. FORD: It looks as though it's equally
11	scattered around the one to one line. So why are you
12	saying it's conservative?
13	MR. TSAO: Well, for example, you can see
14	let's see.
15	You can see just for example, this point
16	here the measurement is about 300 mils. The predict
17	value, let's say, from here to here is about 240 mils.
18	So what it says is that the methodology will predict
19	that the tube wall thinner than measured, therefore it
20	also indicated that the licensee may need to do some
21	monitoring or replacement of that pipe.
22	DR. FORD: But equally there are points on
23	the other side which are not, what you call it
24	MR. TSAO: Well, that's true. Yes, that's
25	correct. But as you know this is only a prediction.
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Predictions, hopefully -- well, from the data point you can see they are scattered toward the conservative side. And also the FAC program according to EPRI is that it's a process. In other words, the licensees would go out, make an inspection, UT or ultrasonic measurements or the pipe thickness and then they will come back and they input that data into the computer code so that to make sure there is a certain accuracy in their predictions.

Also predict that the -- in the prediction method they include some safety factors.

DR. FORD: It seems to me as though there's a huge amount of scatter around that one-toone line. And so the question immediately arises as to what is the impact of that in terms of could you get a through wall erosion event taking place when you had predicted it would not have done so?

MR. TSAO: It could.

DR. FORD: Did you go through that sort of "what if" argument? I mean if you look at that data base, you don't really have too much confidence in CHECWORKS.

MR. TSAO: Well, I wouldn't say they would be relying on CHECWORKS per se. The licensees, not only Waterford but other licensees, you know they

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1	include other factors. For example, other industry
2	experience. You know if some plants have some problem
3	with FAC water lines, then they will consider
4	DR. FORD: I recognize that.
5	MR. TSAO: Right.
6	DR. FORD: But this particular EPU is
7	putting a lot of basis on CHECWORKS to manage this
8	problem. And if this a general observation as to how
9	good CHECWORKS is, my confidence is a little bit
10	shattered.
11	MR. TSAO: I should point out that
12	Waterford is not unique. I did the review for license
13	renewal, and I also asked questions. And this is type
14	of plot that, you know, other licensee has shown me.
15	DR. FORD: Yes, I know.
16	MR. TSAO: In other words, I don't think
17	that licensee is depending solely on what prediction
18	is. They also, you know, include other experiences and
19	inspections. Not only the inspections for the fact,
20	but there are other SME code inspections they have to
21	perform.
22	DR. FORD: I'll ask again. Did you go
23	through the "what if" scenario?
24	MR. TSAO: I have Kris Parcziewski from my
25	branch to elaborate on this.
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ı	DR. FORD: With that amount of uncertainty
2	in your modeling capability and therefore your
3	management capability, do you not feel uncomfortable?
4	MR. TSAO: No.
5	DR. FORD: No?
6	MR. PARCZIEWSKI: Kris Parcziewski from
7	the Chemical Engineering Branch.
8	To answer your question, those points are
9	predicted. CHECWORKS predicts but in addition there
10	is a correction factor for each individual line which
11	is here at the top right hand side, line correction
12	factor which indicates that it is corrected for each
13	individual line all the points predicted in the line
14	are corrected by this line correction factor. And the
15	line is defined as a portion of the system which has
16	the same chemistry but not necessarily the same
17	temperature. If I answer your question.
18	So all those points are already corrected.
19	Ideally, if they were ideal, they would lie in the 45
20	degree line, the middle line. However, obviously,
21	there is some scatter.
22	DR. FORD: I understand the physics
23	MR. PARCZIEWSKI: Yes.
24	DR. FORD: of the erosion process.
25	It's highly dependent on ph. High dependent on
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