Official Transcript of Proceedings ACRS T-3302

NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
Thermal Hydraulic Phenomena Subcommittee

Docket Number: (not applicable)

Location: Rockville, Maryland

Date: Wednesday, January 26, 2005

Work Order No.: NRC-194 Pages 1-364

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is provided by the licensee. And as licensee said, it is more in the -- they used CHECWORKS. It's a computer program that considers hydrodynamics, heat balance, temperature in particular.

As you can see the predictive method is conservative considered to actual measurement.

DR. FORD: I'm sorry. Could you explain that?

MR. TSAO: Okay.

DR. FORD: It looks as though it's equally scattered around the one to one line. So why are you saying it's conservative?

MR. TSAO: Well, for example, you can see -- let's see.

You can see just for example, this point here the measurement is about 300 mils. The predict value, let's say, from here to here is about 240 mils. So what it says is that the methodology will predict that the tube wall thinner than measured, therefore it also indicated that the licensee may need to do some monitoring or replacement of that pipe.

DR. FORD: But equally there are points on the other side which are not, what you call it --

MR. TSAO: Well, that's true. Yes, that's correct. But as you know this is only a prediction.

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-to-one 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

include other factors. For example, other industry experience. You know if some plants have some problem with FAC water lines, then they will consider --

DR. FORD: I recognize that.

MR. TSAO: Right.

DR. FORD: But this particular EPU is putting a lot of basis on CHECWORKS to manage this problem. And if this a general observation as to how good CHECWORKS is, my confidence is a little bit shattered.

MR. TSAO: I should point out that Waterford is not unique. I did the review for license renewal, and I also asked questions. And this is type of plot that, you know, other licensee has shown me.

DR. FORD: Yes, I know.

MR. TSAO: In other words, I don't think that licensee is depending solely on what prediction is. They also, you know, include other experiences and inspections. Not only the inspections for the fact, but there are other SME code inspections they have to perform.

DR. FORD: I'll ask again. Did you go through the "what if" scenario?

MR. TSAO: I have Kris Parcziewski from my branch to elaborate on this.

DR. FORD: With that amount of uncertainty in your modeling capability and therefore your management capability, do you not feel uncomfortable?

MR. TSAO: No.

DR. FORD: No?

MR. PARCZIEWSKI: Kris Parcziewski from the Chemical Engineering Branch.

To answer your question, those points are predicted. CHECWORKS predicts but in addition there is a correction factor for each individual line which is here at the top right hand side, line correction factor which indicates that it is corrected for each individual line all the points predicted in the line are corrected by this line correction factor. And the line is defined as a portion of the system which has the same chemistry but not necessarily the same temperature. If I answer your question.

So all those points are already corrected. Ideally, if they were ideal, they would lie in the 45 degree line, the middle line. However, obviously, there is some scatter.

DR. FORD: I understand the physics --

MR. PARCZIEWSKI: Yes.

DR. FORD: -- of the erosion process. It's highly dependent on ph. High dependent on