

**From:** Tamburro, Peter <Peter.Tamburro@exeloncorp.com>  
**Sent:** Thursday, June 8, 2006 9:15 AM  
**To:** Ouaou, Ahmed <u999ao2@ucm.com>  
**Subject:** RE: Proposed Answer to Item 4

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Ahmed

I got the 21 mils by calculating the average of all readings in 1996 and subtracting the average of all readings in 1994.

I got the 15 mils by calculating the average of all readings in 1996 and subtracting the average of all readings in 1992.

-----Original Message-----

**From:** Ouaou, Ahmed  
**Sent:** Wednesday, June 07, 2006 7:27 AM  
**To:** Tamburro, Peter  
**Subject:** RE: Proposed Answer to Item 4

Pete: how did you arrive at 21 mils and 15 mils?

-----Original Message-----

**From:** Tamburro, Peter  
**Sent:** Tuesday, June 06, 2006 2:03 PM  
**To:** Ouaou, Ahmed  
**Cc:** Quintenz, Tom; Ray, Howie; Polaski, Frederick W  
**Subject:** Proposed Answer to Item 4

The mean thickness values for the 1996 data are consistently greater than the 1992 and 1994 data. On average the 1996 is approximately 21 mils greater than the corresponding 1994 data values and approximately 15 mils greater than the corresponding 1992 data values. It's not clear why the 1996 data is consistently greater.

Inspection process variables were recently researched in April and May of 2006 by the site NDE Ultrasonic Level III personnel. The variables were assessed while comparing the 1996 data to the 1994 data as follows.

- 1) Grid Shift and Transducer Rotation. This factor is not applicable. Grid shift would cause readings to be less in some cases and greater in others which would average out.
- 2) Significant Temperature difference between 1996 and 1994. This factor is not applicable. The NDE data sheets from 1994 and 1996 indicate only a 7 F difference. This is not a greater enough temperature difference to result in a 21 mil increase.
- 3) Transducer/cable. This factor is not applicable. The same model was used in 1992, 1994 and 1996.

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4) Ultrasonic unit. This factor is not applicable. The same model units were used in 1992, 1994 and 1996. Both units that were used during these inspections were tested in April and May of 2006 and found to be in satisfactory working condition.

5) Batteries. This factor is not applicable. Plant procedures require the installation of new batteries prior to each series of inspections.

6) Technician. This factor is not applicable. A review of the 1992, 1994 and 1996 data sheets shows that the personnel who collected the data were certified to SNT-TC-1A or an equivalent procedure.

7) Calibration Block - This factor is not applicable. Both calibration blocks used during this inspection are similar and were receipt inspected to verify that the ultrasonic response equals the physical measurement.

8) Internal Surface Cleanliness. This factor is potentially applicable. The inspection areas are covered with a qualified grease to protect the examination surface from rusting between inspection periods. The grease should be removed prior to the inspection (since sound waves propagate in the grease), and reapplied after the inspection. Tests performed in April and May of 2006 show that the presence of the grease will increase the readings as much as 12 mils. The 1996 inspections were performed by a qualified outage contractor, while the 1992 and 1994 inspections were performed by qualified plant personnel. The governing specification did not clearly specify the requirement to remove the grease prior to the inspection. Therefore it may be possible that the requirement to remove of the grease was not communicated to the contractor, and that the contractor who performed the 1996 inspection may have not removed all or some of the grease.

9) UT unit settings and the application of the external coating. This factor is potentially applicable. It is possible that the ultrasonic unit can be set in a "high gain" setting which may have biased the machine into including the external coating as part of the thickness. The 1996 NDE data sheet neither confirm nor discount whether the unit was set on "high gain".