

### Summary of NRR-1999-A-0057 Allegation

- The allegor recognized there may be a problem with the texture analyses, including sample preparation, identification of the incorrect peak, and alignment of the instrumentation to the correct peak. The allegor tried to correct the problems. The allegor has a valid concern.

*Can bad material be accepted by "good" test results? When does GE use texture analysis to accept material?*

- all of these aspects of the procedure can through the results off, especially non-flat and improperly oriented specimens
- however, the question is, how does GE use the information from the texture analyses? If the texture analyses were conducted to only verify the fabrication processes were done correctly, then variations in the texture analyses may not be as important. If the analyses are being conducted to demonstrate some minimal properties of the cladding, the results may be very important.

- Some questions I have:

- How long have "erroneous" pole figure and texture analyses been generated by Lambda?
- How many other vendors supplying Zry tubing are affected?
- Is this the only lab that has had problems with specimen preparation and texture analysis?
- How does GE use the texture analysis data? What is the pass/fail criteria?
- Does GE have qualified people reviewing the texture data?
- Are texture effects on mechanical properties second order to cold-working effects?

- Example test data (ASTM STP 551, p. 147):

#### 315 C Tensile Properties of hot-rolled and annealed 6.3-mm thick Zry-4 plate

	Transverse Direction	Longitudinal Direction
0.2% Yield Strength, MPa	162-195	118-153
Tensile Strength, MPa	210-240	168-262
elongation, %	33-38	23-36
Reduction of Area, %	61-71	47-65

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## **Additional Questions to the Allegor**

1. A letter was written by the NRC addressed to the allegor on 12/16/00. This letter indicated that NRC did not think the errors resulting from texture analysis at Lambda Research in the development of engineered components was a safety concern. In the allegor's letter to the NRC, dated 2/18/00, there was no mention of the safety concerns that the allegor identified in earlier communications to the NRC (i.e., letters dated 9/12/99 and 10/19/99 and an interview conducted on 10/09/99).

Do you agree with the conclusions made in the NRC letter dated 12/16/99?

If yes, then the safety concerns and issues are closed.

If no, what additional concerns do you have? Were these concerns raised since the time when you received the NRC letter dated 12/16/00?

2. If NRC were to conduct inspections at Lambda Research to follow-up on your additional concerns, how would we identify the records that led you to this conclusions?

Where are the files?

How do you know they are falsified?

Were there any witnesses of the act of the falsification?