

From: Laura Dudes
To: Stephanie Coffin
Date: Mon, May 1, 2000 3:49 PM
Subject: Summary

Stephanie,
I have attached a summary of answers to the questions we were tasked with last week.
Thank you for the opportunity, I really enjoyed working with Caius. Let me know if you need any further assistance.

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ITEM # 121

A/86

(5)

TO: Stephanie Coffin
FROM: Caius Dodd, Laura Dudes
Date: Fri, Apr 21, 2000 4:45 PM
Subject: Indian Point Unit 2 Steam Generator Inspection

RESPONSE TO QUESTIONS ASKED BY NRR

Q1. Review the region between TTS and 1H - especially the area below 1H that was particularly noisy. Observe and comment on the quality of the RPC inspection in this area. compare with the 2000 Cecco/bobbin inspection performed prior to using the RPC probe.

ANSWER: The signal to noise ratio on the 2000 RPC data appears to improve the quality of the inspection in the sludge pile region. (For specific signal to noise voltages see Caius's Data Table)

Q2. investigating look backs on 2000 RPC data...were any indications present in the 1997 Cecco/bobbin inspection and missed?...were any indications present in the 2000 Cecco/bobbin inspection and missed?

ANSWER: The following tubes had indications in the 1997 data but were not called at that time; SG: 22, tube 34-51 and 35-51: SG:23 tube 29-46.

A sample of several other tubes were reviewed, in particular some of the NDD calls, no other tubes were identified to have clear defects in 1997.

One concern identified while reviewing the 2000 data (both cecco/bobbin and RPC) was the fact that all of the above mentioned tubes were called as single analyst calls (ie. One of the analysts missed the call for each of the tubes). This is of concern because the data clearly indicates that a flaw is present. We discussed the number of single analyst calls with the licensee and specifically addressed the concern with these three tubes. The licensee agrees with the assertion that the calls should have been identified and is now considering a method to develop a "smart sample" to add a level of confidence in the overall quality of the data. This sample should probably be chosen based on the signal/noise ratio or a voltage ratio.

Q3. cold leg pits. obtain EPRI qualification for sizing of pits. obtain site specific dedication package of this technique for IP-2. comment on the qualification package...especially the data set upon which the qualification was based. were pulled tubes used? were they similar to IP-2? what is the basis for IP-2 concluding that this technique may be used at IP-2? how well do the analyst guidelines follow the EPRI guidelines?

ANSWER: We reviewed the EPRI qualification, obtained site specific dedication document. Overall the licensee is following the guidelines set forth in the EPRI document. The EPRI data does use some pulled tubes to verify the sizing capability (9/65). These pulled tubes do have copper deposits and are of a similar design vintage as the IP2 tubes. Academically, one may question the uncertainty of the method or whether or not the best probe (and frequency) are being used for sizing, the licensee appears to be taking a conservative approach regarding the cold leg pitting. (They are plugging all pits.)

Q4. compare IGA and pit calls. how obvious is it to distinguish between the two mechanisms? how well do the analysts' guidelines support this distinction?

ANSWER: They are distinguished quite well with the laboratory data however with field inspection there is still a lot of grey area.

Q5. After discovering a long IGA indication in the crevice region of #24-R34/C51 that had not been detected by the Cecco/bobbin production analysts, the licensee developed a "mix" and reanalyzed the Cecco/bobbin data in this region. Comment on any additional indications that they found through this reanalysis. Comment on the effectiveness of this new "mix." Were the additional indications being found really the result of this mix or simply a closer look at the data they already had?

ANSWER: Several new indications were identified with the "new" mix for the cecco/bobbin mix. It did have a positive impact on the ability to see defects in this region. Consequently, the licensee decided to perform 100% inspection in a 4 generators (24" above TSH to TE) using the RPC coil.

Q6. provide general assessment of the overall quality of the eddy current inspection being performed in the region.

Overall, the quality of the inspection has improved since the initial NRC SG onsite review. Some concern still exists on the overall quality of the analyst guidelines, in particular the format they are written in. Also, the quality of the training program used to qualify analysts to the site specific data was of some concern to the inspectors. Specifically, the remediation methods of candidates that fail the initial practical exam and if these issues have impacted the quality of the data production.