

Item 14 - #2

Subj: Tubes with long indications
Date: 4/1/2000
To: aneff@prodigy.net

Andy:

Several tubes on cal 240 of SG24 had the long id indications. Some of them looked measured a small amount of id depth by the phase, but that may have been noise. The amplitude and phase variation with frequency indicated that they were on the id. In particular, tube 2-16 and tube 4-23 had the signal. I wonder if tube 4-23 was mislabeled on the REEL or if it converted wrong, because I did not think you scanned any row 4 tubes.

Caius *Dodd*

Subj: More profiles
Date: 4/4/2000
To: smc1@nrc.gov, elm@nrc.gov

File: C:\WP\FININDIAN~2.NRR (294270 bytes)
DL Time (32000 bps): < 3 minutes

Emmett and Stephanie:

I have added two more profiles to the write-up that I sent this morning. I have finished running the last one (2-72) but I have not transferred the results file to my PC and plotted it up yet. In spite of the increased sensitivity of the new probe, it is hard to predict which tubes will leak from the eddy-current profiles that I have generated thus far. There is probably an "edge effect" and a "look-ahead" effect with these probes that is not being taken into account. The post pressure test inspection of these tubes may reveal some interesting results, particularly if indications that we were not aware of open up. What would you think of pressure-testing a few NDD tubes in this area? I hope to finish the write-up and add the last tube in time for you to review the information tomorrow morning.

Caius

Subj: IP update
Date: 4/5/2000
To: elm@nrc.gov, smc1@nrc.gov

File: C:\WP\FININDIAN~2.NRR (413584 bytes)
DL Time (32000 bps): < 4 minutes

Emmett and Stephanie:

I am sending you my present version of part of the Indian Point report. I still need to add some more graphics and discussions. Some of the sections are there to remind me not to leave a discussion on this topic out of the final report. I will combine this with the two previous Indian Point reports that I have drafted later. I'll talk to you at 10:00.

J/181

Caius

Subj: Cal groups
Date: 4/7/2000
To: aneff@prodigy.net
CC: (cdb@nrc.gov), (elm@nrc.gov)

Andy:

I am being overwhelmed by all the cal groups that you have and are sending me. In particular, I am interested in the post pressure tests with the high frequency probe. Could you Email me a listing of what tubes are on the cal groups. That would cut down on my search time considerably. My hard drive is about full and it is becoming cumbersome to change disks to find what I need. One of my two optical drives has gone out so that also cuts down on my flexibility in manipulating data.

Thanks, Caius

Subj: IP calibration, detection and sizing
Date: 4/7/2000
To: elm@nrc.gov, smc1@nrc.gov

File: C:\WP\FININDIAN~3.NRR (741838 bytes)
DL Time (32000 bps): < 6 minutes

Stephanie and Emmett:

I have been attempting to answer the question about the detectability of the smaller, high-frequency plus-point probe. I really have not done that, due to the variation in amplitude of the signal from IDSCC. Also, this write-up gives some indication of the "look-ahead" values that should be used. This also depends on the amplitude signal from IDSCC, as well as their shape.

Subj: Probe Name
Date: 4/7/2000
To: bvollmer@zetec.com.
CC: HHouser@ZETEC.com

Bob:

As you have probably heard the new smaller, high frequency plus-point is much better at inspecting the U-bends than the midrange coil that was used previously. Since I am getting tired of calling it the new smaller, high frequency plus-point, I hoped that Zetec could come up with a name for it. I had suggested to Howie that you name it after me, but he said that Zetec had already named a probe after me, called the "dummy probe". It just sits there, spinning around and around, taking up space, but really does not do anything.

Since having two probes named after me would be confusing, perhaps Zetec could come up with a name that reflects its small size and high-frequency capabilities. I appreciate the help from Zetec in getting this probe into the field so quick.

I am hoping to get this probe used for other id defect problems. It has a larger signal from id defects as the frequency is increased, and the od noise decreases. The od noise also rotates horizontal, so the detectability of the small defects is enhanced. The smaller probe size also emphasizes the id defects and reduces od influences. Thanks for the help in getting this probe into the field so quickly.

Caius

Subj: Fwd: Post Insitu Eddy Current Data
Date: 4/7/2000
To: elm@nrc.gov, smc1@nrc.gov

Emmett & Stephanie:

They are running behind in getting the post test tube results to me. I hope that this not intentional. I am running behind on looking at data that they have already sent me, so I don't guess it is too important. My system is about saturated at the present time, so this may slow me down more. However, I am working as fast as I can and will continue to do so.

Thanks, Caius

Subj: Cal group listings, data disk
Date: 4/8/2000
To: aneff@prodigy.net
CC: (elm@nrc.gov), (smc1@nrc.gov)

Andy:

The information on the location of the different tubes in the cal groups has helped out a lot. I have gotten the data disk this morning with the scans of the pressure tested tubes on it and it is quite interesting. It appears that pressurizing the tubes does enhance the defects that may be missed by the pre pressurization, even when the tubes do not leak.

Thanks, Caius

Subj: Tube 2-87 of steam generator 21
Date: 4/10/2000
To: aneff@prodigy.net
CC: (smc1@nrc.gov), (elm@nrc.gov)

Andy:

Do I have the pre-test of 2-87 with the high frequency probe? Also, how about the 97 data for this tube. I do have the March 3rd data with the midrange probe and the post pressure test with the high-frequency probe. It appears to have grown some, but it would help to have the best data that is available to measure this.

Thanks, Caius

Subj: Indian point
Date: 4/10/2000
To: elm@nrc.gov, smcl@nrc.gov

Emmett and Stephanie:

If my transmission to you last Friday was the same as that earlier in the week, let me know. I clicked on the new one (Indianpt4.nrr) but my computer insisted that it was sending the old one (indianpt3.nrr).

Review of Pressure Tested Tubes:

I have done a quick review on all of the post-burst test data sent to me thus far. It appears that the pressurization brings out defects that were not called before, and some may not have been visible. The pressure test does seem to increase the signal for all of the tests, even if the tubes did not burst. I will review the data from the rest of the tubes when it is sent to me.

To really determine how the indications have grown, a pre and post profile should be done, where the data is available possible. In my view, some of the Westinghouse pre scans, with their depth adjustment, under estimated the defect depth. However, this depth number is not real accurate under the circumstances. If their depth number is correct, then we can not predict burst and leak pressures with adequate accuracy. If Emmett's contention (which I agree with) that there is a population of tubes with defects below 40 to 50 % deep that is not being detected, then the inspection is not sensitive enough. Either way, there is a problem.

It appears that there also may be a problem with the "region of low sensitivity" at the top of the sludge pile. This region exists at several plants that have the same copper problems that Indian Point has. This problem needs to be addressed and solved.

Caius

Subj: Data tapes
Date: 4/11/2000
To: aneff@prodigy.net
CC: (elm@nrc.gov), (smcl@nrc.gov)

Andy:

Would you send me the calls that were made on the different cals and on the individual tapes in the cals. This will help me know which ones to load and look at. I am spending a lot of time loading, converting and unloading the tapes only to find that I do not want to look at that one at this time.

Also, the disk sent on 4/4/00 that had :
24-28/30 CAL 227
22-8/13 222

22-30-13 261
22-38/21 257
22-35/40 257
22-25/49 259
22-35-50 259
22-43/53 259
22-39/59 259
22-43/59 259
22-33/78 259
21-13/3 239
21-12/4 237
21-16/6 239
21-29/38 240

did not have a TAPE.INDEX with the cal groups and the conversion spooler would not work on them. I already had two tubes from SG22 Cal259 so I copied that TAPE.INDEX over to it and converted it without any trouble. However, I was unable to do the others. Could you resend the other cal groups with the TAPE.INDEX?

Thanks, Caius

Subj: SG23-REEL227
Date: 4/11/2000
To: aneff@prodigy.net

Andy:

According to your notes you have sent this to me, but I have not been able to find it. Could you tell me when it was sent or resend it?

Thanks, Caius

ubj: Fwd: 34-51 at TSP #1
Date: 4/12/2000
To: elm@nrc.gov, smc1@nrc.gov

Emmett and Stephanie:

This explains the defect signals that I saw and the apparent variation in test speed. I thought that they said they were testing to the first support on all the tubes in this region. In fact, it looks like they are only going a foot above the tube sheet on some scans and above the first support on others.

I will get back to profiling the indications, particularly in the u-bend region.
Caius

ubj: Fwd: 34-51 at TSP #1
Date: 4/12/2000
To: elm@nrc.gov, smc1@nrc.gov

Emmett and Stephanie:

This explains the defect signals that I saw and the apparent variation in test speed. I thought that they said they were testing to the first support on all the tubes in this region. In fact, it looks like they are only going a foot above the tube sheet on some scans and above the first support on others.

I will get back to profiling the indications, particularly in the u-bend region.

Caius

Subj: Copper at plants

Date: 4/17/2000

To: elm@nrc.gov

Emmett:

Copper was a problem in a number of the older plants. I personally observed it at Ginna and Point Beach. I believe it was also present at all of the old model 44 plants, such as Kewaunee, Surry, and Prairie Island Unit 1. Most of the newer plants have realized the problems that copper gave them, both during the eddy-current inspection and the problems with pitting, and either removed all copper from the secondary side, or never had it. The newer plants do not have this problem. Some of them even have very little magnetite sludge on the tubes.

Caius

Subj: Pressure tests

Date: 4/17/2000

To: elm@nrc.gov, smc1@nrc.gov

File: C:\WP\FI\INDIAN~4.NRR (1152246 bytes)

DL Time (32000 bps): < 10 minutes

Emmett and Stephanie:

I have revised the section named Indianpt5 and am sending you the latest. I still need to flip the "distance along tube" scale for Figure 1 and to add the post-pressure profile of the part of the defect that I could get. I also need to profile 2-5 of SG 24 and the other defects that were burst tested. Also I need to add comments about the signal-to-noise for the other defects. I'll talk to you at 10:00.

Caius

Subj: Update of profiles

Date: 4/18/2000

To: elm@nrc.gov, smc1@nrc.gov

File: C:\WP\FI\INDIAN~4.NRR (1167923 bytes)

DL Time (32000 bps): < 10 minutes

Emmett and Stephanie:

I have changed the report indianpt5.nrr slightly by revising Figure 1 as you suggested, Emmett, and have added a little more discussion. I am now working on the before and after profiles of 2-87 of SG21 and 2-85 of SG23 and will add these to the report. I'll talk to you at 10:00 am.

Caius

Subj: IP5 report
Date: 4/20/2000
To: elm@nrc.gov, smc1@nrc.gov

File: C:\WP\FINDIAN~4.NRR (1663259 bytes)
DL Time (32000 bps): < 14 minutes

Emmett and Stephanie:
I have finished profiling all of the before-and-after high-frequency u-bend tests. I still have several more tubes to profile for you. I'll talk to you at 10:00 am.

Caius

Subj: Re: sludge pile inspection
Date: 4/21/2000
To: SMC1@nrc.gov, elm@nrc.gov

Stephanie:
This list looks good. We might add, assuming there is time:

6. Review the qualification of the ceramic coated probes for inspection in the tube sheet and sludge regions.

7. Review the qualification of the analysts brought in after our visit to the plant.

Have a good weekend and I will talk to you Monday.

Caius

Subj: Plant visit:
Date: 4/21/2000
To: aneff@prodigy.net

Andy:
I would appreciate it if you could load the Eddynet 98 software on one of the work stations for me to use while I will be there. If you can not get it, I could bring a copy with me. I will bring my own enable buttons. See you on Tuesday.

Caius