[Randy Schenkman] (0:00 - 0:18)
We are going to get started. Kathy is on her way, but she's got the traffic. Also, this afternoon, Kurt Geber is not able to make it, and James will explain that.

[James Futch] (0:21 - 2:12)
So, we have a talk we started planning with Kurt Geber, the Radiation Safety Officer and Health Physicist at the Kennedy Space Center. We started planning that a little before we made the meeting. Does that sound better?

Yep. So, Kurt, the RSO at the Kennedy Space Center, was going to do a talk about the uses of radiation at the Cape, and also what the Department of Health and Safety Office does for radiation protection. And we worked on it several months.

He got approval for it, and then the federal shutdown happened. And he became, well, he and the talk became non-mission critical. So, he's not allowed to come give it to us today.

We tried to remove him. The federal government said no. We tried to get one of his staff to do it, who actually is working.

They also said no. So, we have a great talk to look forward to at the next meeting in a minute. But not this time.

And we'll also be talking about the Dragonfly mission. And barely. And one of the nuclear reactors, as part of the Artemis missions, for the manned missions back to the moon.

And I already asked him a lot of questions, like, oh, 100 kilowatts, really? How? What kind?

What technology? You know, heat dissipation, all the rest of it. And he said, hmm, I don't know, but a million more, man.

And that's supposed to be in, he said, early 2027. So, wrap your brain around that. RFP's going on, anybody want to build one?

All right, let's talk about it.

[Randy Schenkman] (2:16 - 2:34)
Okay, so, first order is to approve the minutes of the May 13th meeting. Comments? Anything?

Nope. Okay, so.

[Chantel Corbett] (2:35 - 2:36)
Motion to approve.

[Mark Seddon] (2:36 - 2:39)
I second.

[Randy Schenkman] (2:42 - 2:50)
Okay, so, it looks like if nobody has a comment, then it's going to pass.

[Randy Schenkman] (2:51 - 2:52)

Okay. Okay.

[James Futch] (3:03 - 3:49)
Technology-wise today, we do not have the court reporter. That did not work out, so we had to come back to the old technology, which is the little tiny recorder and the microphones that you see, the little tiny clamshells on the desktops around. If you are a soft voice, like me, shout.

Or talk louder. We've changed chairs, so we're next to one of those. It didn't make notes preparation much easier.

We are taking notes on the major topics discussed and blending motions and things like that. So, these will not be word-for-word transcription. This is just so we get the summary notes correct for the next notes, which you won't have an earlobe today to read them in.

All right.

[Randy Schenkman] (3:53 - 3:59)
Okay, next. We'd like everybody to introduce themselves. Start over here.

[Luis Rodriguez] (4:00 - 4:01)
Luis Rodriguez, podiatrist.

[Rosevelt Nheik] (4:03 - 4:07)
Roosevelt Nheik, radiologist assistant from Tampa, serving for the public.

[Bill Atherton] (4:08 - 4:12)
Bill Atherton, a chiropractic radiologist from Miami.

[Chantel Corbett] (4:12 - 4:17)
Chantel Corbett, fusion physics, nuclear medicine technologist representative.

[Kevin Kunder] (4:18 - 4:22)
Kevin Kunder, administrator of the radioactive materials program for the Department of Health and Radiation Control.

[Lisa Gavathas] (4:22 - 4:28)
Lisa Gavathas, I'm the administrator for the radiation machine section for the department.

[James Futch] (4:28 - 4:31)
James Futch, radiation control.

[Randy Schenkman] (4:32 - 4:35)
Randy Schenkman, board-certified radiologist.

[Mark Seddon] (4:36 - 4:39)
Mark Seddon, board-certified physicist.

[Clark Eldredge] (4:40 - 4:42)
Clark Eldredge, bureau chief, radiation control.

[Brenda Andrews] (4:43 - 4:46)

Brenda Andrews, operations and management consultant.

[Unknown Speaker] (4:47 - 4:50)
Do you all want to go back there before I continue?

[Zach Friis] (4:51 - 5:01)
Zach Friis, west physics, but I'm also a volunteer for the AAPM liaison role, and a state champion.

[Sean Wilson] (5:01 - 5:15)
Sean Wilson, also a physicist with west physics, but also the current president of health physics society.

[Joe Spratt] (5:23 - 5:28)
Joe Spratt, national sales leader for Nanox. We're very thankful to be here today.

[Larry Van Rossum] (5:30 - 5:35)
Good morning. Larry Van Rossum, based here in Tampa, southeast region manager for Nanox.

[Joe Danek] (5:36 - 5:41)
Joe Danek, CHP, retired from the floor of power and light and NextEra Energy with the nuclear power program.

[Adam Weaver] (5:43 - 5:47)
Adam Weaver, CHP, from the University of South Florida.

[Matt Cohen] (5:48 - 5:53)
Matt Cohen, clinical education specialist from Nanox.

[Joshua Carde] (5:53 – 5:54)
Joshua, radiation control.

[Randy Schenkman] (5:55 - 6:10)
Well, welcome everybody. We have a presentation coming from Nanox ARC, so if you'd like to get started on that, are we okay time-wise?

[James Futch] (6:12 - 6:31)
One more request for lunch menus, because this is next door now, if anybody hasn't passed it forward. And Matt, if you want to do introductions for anybody on the other end or let them do it, I'm not sure how you want to do it.

[Matt Cohen] (6:31 - 7:09)
Sure, I'll introduce our first speaker, Gili. Gili is our head of product of Nanox ARC. He's based in Israel.

He'll be taking us through the journey of the ARC, its technology, and what it's capable of doing, as well as how it makes it so different from everything else out there. And then following Dilley's presentation, we have Dr. Sanchez, who is our in-house radiologist. He's going to take us through a couple of DICOMs that the ARC has produced, and kind of show off its images, what it can show, and how it benefits our patients.

[James Futch] (7:09 - 7:21)
And also, in case you hadn't noticed, there's a full copy of this talk in front of you, in front of Matt Clark's slide. So if you can't see anything, you can just look at the paper in front.

[Matt Cohen] (7:22 - 10:20)
Alright, great. Gili, can you go to the next slide? And the next slide.

That's the three of us. So Nanox, just so you know, we are more than just the Nanox ARC. Nanox is an imaging solutions company.

They are a full ecosystem of products that are designed for the imaging community. We are involved with AI in the CT world. We are involved with cloud reconstruction that's attached to the ARC.

We have our own original equipment that we've produced and patented that's at the heart of the Nanox ARC. And we'll be talking about that and showing it off later. We also have our own teleradiology group that assists us with reads and training radiologists.

And together, this creates an ecosystem ideal for the Nanox ARC and the future of imaging. This is a quick animation video of the machine being used. It just kind of helps you visualize what we're going to be talking about.

It is a tablet-run machine. It's cloud-based. And what you're basically looking at are five whole cathode tubes.

So it's a multi-source, stationary x-ray machine that's going to be sweeping and scanning the patient, creating over 100 coronal slices. It then goes to our cloud for reconstruction. And then it's sent back down for approval and then for radiology.

Next slide. So we are FDA cleared for adult general use in MSK, in chest, intra-abdominal, and paranasal sinuses. Adults only at this time.

Next slide. This is just a quick breakdown of the many different components of the ARC. As you can see at the bottom, some of the pieces are original equipment.

The source, the tube, we'll be able to show you at lunch. And because of its footprint, because of its low use of power, its design, there's a lot of advantages that Gili's going to be able to discuss as we move forward. Gili, you want to take over?

You're on mute, Gili.

[Gili Karniel] (10:21 - 26:00)
Sorry. There we go. Thank you very much.

Hi everybody. My name is Gili. I'm a product of ARC.

And I was discussing here a bit about the cold catheter technology in our anonymous product. A little bit about the system itself as Matt introduced. And I'm going to back up a bit to the video that I showed you.

And I'm going to discuss a little bit about the concept of how the system is working. So the ARC is a simplified tomographic or 3D imaging system. So, suppose you take the basic principle of CP.

In that case, you have this huge tube, multi-mega-inch unit extra tube that rotates around the patient and projects hundreds of images of the area of interest or the patient's body part, each from a different angle. So that's it. CP then takes this bunch of projection images, feeds them into an algorithm, and given an algorithmic construction of that body part, then the technology is used to diagnose the patient.

So we took the same operational principle, but we broke down the extra tube into several, in this case, files. And I mentioned a very small, cheap, stationary amount of extra tubes. And we did it using our proprietary cold catheter technology that I'm going to discuss later on.

This is a technology that enables us to generate this kind of system. We place them in that big doughnut you see here above the patient, and we move them above the patient's body in an arc. So the combined movement in the position of these extra tubes generates a virtual shell above the patient.

And again, we have a set of projection images of the same body part from different angles. So we use the same algorithm, and we get the reconstruction of the body part. And instead of axial images like CP, we can place it parallel to the table surface.

This mode of operation is called tomosynthesis, and you probably know it from Igno-Breast tomosynthesis, which is an excellent modality for breast cancer imaging. So we're bringing the same technique in an affordable way to general radiology, and Dr. Ostatul will cover the great clinical benefits of it later on. So you probably ask yourself, why are we even discussing tomosynthesis, or the nanosat when other tomographic systems, especially CTs, are already widely available in the market?

So the reason is the development of the cold catheter technology, which enables us to develop a multi-source imaging solution at a fraction of the cost, dose, and power of our systems. This cold catheter technology finally makes multi-source imaging practical and accessible. So let's dive in and learn a bit about it.

So what exactly is a cold catheter? In traditional X-ray tubes, you have a hot filament that heats up and releases the electron. It's the filament inside the tube.

This has been the way in both X-ray tubes and filament light bulbs for the past 150 years. And the phenomenon is called thermionic emission. So imagine we have an electron hanging on inside a double-pronged battery, which is the filament in our X-ray tube.

And it's basically stuck in an energy well. It doesn't have enough energy to create out of the metal on its own. This barrier here, that is what we see here in the thick line, is called the X-ray metal wall function.

It's like a wall that the electron cannot cross. But once we heat things up and provide thermal energy, the electron gets enough energy to jump over the barrier. After that, thanks to the electric field between the catheter and the metal, of course, the electron spins towards the metal, creating the effect that we all see.

But in cold cathode, we have another way of doing it. There is no filament. There is no heating.

Instead, we use a strong electric field to pull electrons directly out of the cathode surface. This phenomenon is called field emission. The external field of the external electron is so strong, it causes the energy barrier of the metal to lower so much that the electrons are able to quantum down through the barrier itself.

You can think of it like you are using an electric field to vacuum out electrons directly from the metal, from the cathode. This is a big deal, because it means that we can generate X-rays without controlling any filament temperatures. We do it only using voltages.

And voltages can be switched and changed almost instantaneously. It opens the doors for faster switching, lower power consumption, more compact images and designs. So, when we say cold cathode, we really think about a fundamentally different way of generating the electron stream inside the X-ray.

Let's talk about the most common types of cold cathode used in research and some commercial applications, which is the carbon nanotubes. If you research a bit about cold cathode, you will see that these kinds of cold cathodes, called CMPs, called carbon nanotubes, are essentially like rolled up sheets of graphene. They are super thin, super strong, and shaped like tiny needles.

Their tip has a very high aspect ratio. You can see that in the photo here. And when you apply an electric field into the center of these tips, in something around a few hundred volts, you create a very strong electric field, and the electrons, as we say, pop out of the nanotubes, again using the field-emission effect.

They are relatively easy to produce using methods like Arctischar or chemical vapor. And they have been like the poster child for cold cathode research for years. And we already have some companies, other than us, making CMPs.

However, and that's a big however, they have serious limitations. Under high voltage CMPs typically bend or even break. They have some reliability or lifetime valence, especially in high currents and voltages.

It can be tricky to control the size and the uniformity of the photo spot. And it's less than ideal. Let's switch to another cold cathode design, more closely to what our design is doing.

It's called the spin-type nanotubes. And this goes way back to the late 1960s, when Charles Pym of SRI Laboratories came up with the idea. The original cathodes were made of molybdenum and featured tightly packed arrays of tiny cones here.

You can see them here. And under each cone is a position just below the center of what we call a gatehead. When voltage, you can see my mouse over here, when voltage is applied to the gate, it creates a very, very high and strong electric field at the tip of the cone, which pulls the electron out via the emission.

This design is elegant, compact, but also has its limits. In high voltage, high current environments, like those inside an electric tube, traditional spin cathodes used to break or even fail, like so. So, the concept is solved.

And the original notation couldn't really handle the demands of nanotechnology. That's where nanox came in. We took the core in here, and we re-interviewed it.

So, this is our design of the arc filter. We took this spin-type cathode that was, by the way, initially developed for sodium, for flaxseed, and we significantly improved its density and stability. We call it a nano-spin technology, and it's manufactured using the same semiconductor processing techniques that you use to provide your regular chips.

It produces what we call a NEMS chip, which is a microelectrode mechanical system, which produces those really hundreds of millions of nano-cones on the surface of the chip. Each cone here acts as a microelectrode, and the high density of the array enables high current, compared to any other of the previous technologies. Here you can see a cross-section view that illustrates how this thing is built.

So, you have this cone here, built from the nano-spin, and it's a cross-section, so you need to think it's a position of the riser at the middle of a hole, and once you apply a very low voltage, a few thousands of

volts, this thing starts shooting electrons. Now, the way that X-rays are produced in our system, in our X-ray tubes, is the same as any other X-ray tubes. Once we get the electron cannon here to release the electrons, again, the X-ray will accelerate towards the anode, and then it can produce the X-rays.

You can see here how we manufacture these chips. It's very similar to manufacturing regular cone chips from silicon, but the technology inside is dramatically different. I think Matt brought some tests or demo units we passed around, so you can ask him for that.

It's very, very small, and it's the core of our technology. We grind this totally as a nano-source, and it's used in each one of our nano-systems today. So, we took this chip, and we replaced the metal filament inside the X-ray tube to create this X-ray, what we call a difficult X-ray.

It's very important to emphasize that up until now, all blue and red were blue and red, but this technology has some progress, especially when you try to use it in a very harsh environment, which is inside of the X-ray tube. So, why do it? Why go through all the trouble?

The key advantage of the cold cathode technology lies in its capability to power several X-ray sources rapidly in a system that utilizes multiple sources. You can utilize it in a stand-by mode, where the tube current, or the tube voltage, the high dB, is active. The emission current, the mass, is independent with the KV, and it can provide a very fast imaging sequence.

And this is the reason why we are now talking about multi-source and tomosynthesis systems, because once we have this field image chip, and we plug it in, and we create a cold cathode X-ray tube, now we can connect and power all those X-ray tubes. And as an electronic power on and off, the chips inside the tube, and we can operate them in sequence. That brings our ability to not use the huge X-ray tube of the city, and use only low-power X-ray tubes, stationary amplitudes.

And this brings down the entire power requirements and design of the entire system, and then we can get a tomographic system that basically operates using a conventional power outlet, like a power outlet. And this is the basic operation of the monox arc. This is a demo of how the arc is doing its imaging.

You can use either a single central tube, either the five, or use up to five tubes. The protocol determines which tube will be activated, and in which sequence. The dose for the patient, and probably later, is far less than in the other tomographic systems, and in the city systems.

And the radiographers are still able to change the A-V that you think about, because the A-V demands to accommodate different patients. This is basically the concept of single, multi-source X-ray projection to generate those tomosynthesis images. Guys, any questions until now?

[Randy Schenkman] (26:01 - 26:34)
I do.

I have two questions. Can you see the individual images if you need to, or are they only the combined image that you get at the end? Can you see the individual images that it's taking before it combines them, or can you only see the combined image at the end?

[Gili Karniel] (26:36 - 26:57)

Yes, you can read all the arc content on the tablet. We can see the individual images before it's being sent to reconstruction. That's how the radiographer knows that he got the correct body area before he's sending that to the cloud.

[Randy Schenkman] (26:57 - 27:08)
And my other question is, how many chips, these little chips, do you get in each of these individual arcs?

[Gili Karniel] (27:11 - 27:13)
One for each tube, so five.

[Randy Schenkman] (27:14 - 27:20)
So five for the five tubes? Yes. Okay, thank you.

[Gili Karniel](27:22 - 27:22)
Great.

[Mark Seddon] (27:22 - 27:39)
I have another question. So the equivalency to mass in a traditional X-ray tube, obviously the current is different in this situation since you're using tunneling to generate your electrons. How does that equate?

[Gili Karniel] (27:41 - 27:46)
Sorry, can you repeat the question, please? Can you repeat it? It's very low.

[Mark Seddon] (27:47 - 28:02)
Okay, so how does your mass equate for these tubes versus a traditional X-ray tube? Since the current is different, is the chip generating your electron versus a traditional cathode?

[Gili Karniel] (28:03 - 29:17)
Okay, so the system itself is doing tunnels. So each one of the projection images has a very, very, very low mass compared to your conventional X-rays. It's like 0.2 mass per projection, for example, chest X-ray, chest study. But you do usually get 30 projections per study, per scan. So you have roughly like one, two to, in terms of dose, roughly two to maybe five or four patient dose compared to the same image taken at the same body part of an X-ray. But you get demographic data at about 10 times less for those of CT, for example.

Does that answer your question?

[Mark Seddon] (29:18 - 29:30)
So each chip can generate different current or different mass equivalency by what? Changing the voltage?

[Gili Karniel] (29:32 - 30:18)
Yes. It's a trick we use. Because of the shape, usually what you do, you apply a mass, a filament current, you're looking at mass electrons, and that controls the mass, right?

But here, since we are using voltages in the chip, then we have two voltages, the KV, which is the same as any other X-ray tube, and the voltage from the chip itself, the base to the gate voltage. And that is the voltage that determines what the tube current is being deployed to the patient.

[Mark Seddon] (30:19 - 30:23)
And is there a max flux of electrons you can have?

[Gili Karniel] (30:23 - 30:55)
Well, the tubes were designed to be very, very low dose and low current and low mass. In our system, I believe it's below two mass for the max per shot. And again, because we're doing quantum synthesis, we don't need to provide that much of a radiation because the clinical data is generated not from the images themselves, but from the reconstruction.

[Bill Atherton] (31:00 - 31:19)
I have a question. Is each tube experience or having the same mass and KV for each tube of the five? Or can you have different KV, PMS for the different tubes giving you different images to combine?

[Gili Karniel] (31:21 - 31:55)
Great question. Currently, we're using the same KV and the same mass for each projection. Inside is a different set of scans.

It makes it a bit more easy to operate. But in quantum, we can change it very dynamically if you want it. Currently, the clinical protocols we use are 30 projections, all the same KV, all the same mass.

[Lisa Gavathas] (32:02 - 32:09)
Okay, I have a question. What's the maximum KV for each tube? Maximum KV?

[Gili Karniel] (32:09 - 32:10)
110 KV.

[James Futch] (32:13 - 32:27)
This is James. I have a question about tube life. How long?

Excuse me? What life do you get out of each of the tubes?

[Gili Karniel] (32:29 - 32:52)
What life? Well, no. No, we designed it to be tens of thousands of projections for each tube.

And we are getting better and better with each batch. It's a good company.

[Joe Danek] (32:55 - 33:05)
Thank you. What's the status in the state of Florida for use of this product? Where does it stand right now?

[Clark Eldredge] (33:06 - 33:38)
So, the question was, what's the current status for use of this in Florida? It's accepted. It's got its FDA.

And so, it's allowed. There's nothing about it that violates any of our regs at this time. We don't have any limitations on it.

Unlike some of the other current things out there, handheld systems, we don't permit stuff like that. So, are there any facilities in Florida that you know of that are using it? Right now, there are two that have been installed.

[James Futch] (33:38 - 33:48)
I think in the process of installing the one at Kaiser. And I think the other one we talked about, Matt, that wasn't installed and not being used yet.

[Matt Cohen] (33:51 - 33:52)

It's installed and planned.

[James Futch] (33:55 - 34:02)
And that's the one that Nic Pospishil mentioned at the time of the last meeting. One of our inspectors.

[Adam Weaver] (34:04 - 34:12)
Do they pay per tube? Yes. So, each one of these little tubes?

Okay. Didn't know if there was going to be any difference.

[Clark Eldredge] (34:13 - 34:56)
That is one of the things we need to work. We have questions on. It's actually how we're going to inspect these.

And because this is a fixed tube. So, our protocol, it's not a constant on tube like in a CT. So, our protocol for inspections is to check the repeatability of a fixed tube to make sure that it's stable and, you know.

Reproducible? Reproducible. And so, that is one thing we'll have to work out with you all exactly how we can get in, how we can actually work that out.

And that's the reason for each, the charging of five tubes. Because we're going to test it five times, once for each tube. We're working with the state of California in a similar fashion.

[Adam Weaver] (34:56 - 35:00)
Can you use the same equipment? Can you use your same equipment?

[Clark Eldredge] (35:01 - 35:09)
Yes, our same equipment should work with this since we're talking about a single tube. So, we just have to figure out how to get them normal to the beam and things like that.

[Adam Weaver] (35:09 - 35:13)
I didn't know if the pulses were too quick to be resolved.

[Clark Eldredge] (35:16 - 35:38)
The equipment sees some pretty tight pulses because we have some high pulse rate small tubes out there. What is the, and that's a good question, what is your pulse size? What is?

Your pulse. What is your pulse rate in your tubes?

[Gili Karniel] (35:39 - 36:11)
Oh, it depends on the mass. I can't recall it from the top of my head, but if you open the user manual, we have a table at the end that tells it. Sorry, I don't know.

I'm sorry. It's very fast, like milliseconds.

[Clark Eldredge] (36:11 - 36:20)
Yeah, because our equipment does differentiate millisecond pulses. So, I was just thinking it somehow exceeded going shorter than millisecond. You know?

[James Futch] (36:26 - 36:32)
We have one question from our esteemed medical physics audience here. Hold on a second.

[Sean Willson] (36:34 - 36:41)
Thank you. Two questions. One for you, sir.

What's the minimum KV that this system will run?

[Gili Karniel] (36:43 - 36:44)
Minimum KV?

[Sean Wilson] (36:45 - 37:00)
Are you looking at generating or working into the mammography field, essentially? MR? Mammography.

Mammo. To get into the mammography field? The CMT technology?

[Chantel Corbett] (37:01 - 37:04)
You've got to talk louder. He can't hear.

[James Futch] (37:04 - 37:07)
He's asking for use of mammography.

[Gili Karniel] (37:09 - 37:25)
Oh, the technology itself can be used very well in the field of mammography. And I know that there are some people, some companies are actually doing it. And I think it's a good idea.

[Sean Wilson] (37:26 - 38:00)
And then for the state, obviously, looking at the presentation, there are between 105,000 cones of aluminum per chip. So, we're testing an average KV in mass output. Is that kind of what we're going to have to do?

We can't test every individual chip. So, as the system, as the chips slowly degrade over time, how are we going to determine that?

[Sean Wilson] (38:02 - 38:08)
What's the threshold that a chip or a tube has to meet in order to ensure consistency?

[Gili Karniel] (38:12 - 38:17)
I don't have the question. How do we deal with degrading of the chip?

[James Futch] (38:18 - 38:21)
Yeah, I think that was the general question.

[Adam Weaver] (38:23 - 38:35)
Well, are there any... Have you done any life studies? Pardon me?

Have you done any life studies on how long the tubes last during performance degradation over time?

[Gili Karniel] (38:36 - 40:38)
Yeah, of course. We would be releasing the writing before that. The tubes, we have the ability to monitor extensively what's going on inside the tubes because we build the whole stack, technology stack, from the chip, from the microelectronics, all the way to the imaging and we can determine very well and monitor very well the condition of the tube throughout its lifetime and we're able to compensate, for example, if,

again, putting a chip inside a very harsh environment of an X-ray tube is something that you usually don't do. So, because the chip gets exposed to a lot of ions and a lot of distorted...

every one of the chips usually moves like telephones or whatever are encased in a very protective encasement. Having said that, we are able to, first of all, design the tubes in a way that will lengthen the viable life of the chips themselves like the X-ray chips themselves and we are able to monitor and compensate if there is any deterioration of the tubes, for example, if any of the microstate cones get out of work or any reason, we are able to compensate in order to provide the same exact dose preparation along its life. However, I cannot give you any full numbers at this moment since the company reserves information.

[Joe Spratt] (40:40 - 41:05)
What I would say is every single chip and every single piece of equipment that we have across the world is monitored for every single scan. We can look at every scan, every chip at all times. So, you are measuring the output of the chip?

Yes. Gili? Did you hear?

So, we are measuring the output of the chip on every single system, correct?

[Gili Karniel] (41:06 - 41:09)
On every single scan and every single projection.

[Joe Spratt] (41:12 - 41:16)
And that's why. We can be able to pull it up and...

[Mark Seddon] (41:18 - 41:36)
So, it can read, it can adjust on the fly to compensate for degradation as they are saying as you lose cone, like this is 100 million nano cones, right? So, as you lose cone on the chip, it will compensate to adjust it. Okay.

We monitor now for every single piece.

[Randy Schenkman] (41:37 - 41:43)
So, when the chip wears out, do you have to replace the entire tube or just the chip?

[Joe Spratt] (41:43 - 41:55)
So, that may be Gili and Fred. If the, if a tube, if a chip burns out, do we need to replace the entire system or just that one chip? I think that's the question.

[Randy Schenkman] (41:55 - 41:58)
Chip or the entire tube?

[Joe Spratt] (41:58 - 41:59)
The chip or the entire tube?

[Gili Karniel] (42:01 - 42:25)
The tube fell. It's in case of the fact where you don't at the moment want or can't replace the chip inside the tube. But, the design is simple enough where you can in a very short length of time plug out the extra tube, plug one new one in and put a new one in.

[Tom Morgan] (42:29 - 42:48)
Question about the individual protocols. What administrative controls are available in the software to control who is allowed to adjust protocols in case patient sizes and things like that.

[James Futch] (42:51 - 43:02)
Controls adequate to make sure that the permanent changes aren't made in the technique accidentally.

[Gili Karniel] (43:04 - 43:21)
So, let me reiterate the question so I think I understand it. You're asking who is in charge of changing and how much can you change the factors inside the system?

[Tom Morgan] (43:21 - 43:55)
Yeah, I'm concerned about the CT haircut problem that happened years ago. Protocol was changed for an individual patient, but it was not, it was changed permanently. Some states have chosen to regulate CT protocols by requiring a safety protocol committee safety program.

[James Futch] (43:58 - 44:09)
So the question is how can an individual technologist change the protocol and if that protocol is changed for one patient is it going to be changed for all going forward?

[Gili Karniel] (44:11 - 45:16)
So, the ability of the technologist is only to change for that specific patient, the KB and the mask for that specific skin. That's it. You cannot change the number of projections, you cannot change the number of where the projections are taken in any other way.

It basically resembles like a very, in its concept it resembles like a handheld x-ray tube that you have in your clinic, for example. KB and mask, that's it. The protocols themselves are managed by the cloud from us.

Meaning that each system is pulling the correct or the appropriate protocols from the cloud. And we are able to determine exactly who is doing what, based on the clinical study that we did in developing and deploying these clinical protocols.

[Tom Morgan] (45:17 - 45:27)
So if an institution in the hospital wanted to change the protocol, they would have to go through you to do so?

[Joe Spratt] (45:32 - 46:07)
It's similar to like a Tesla, right? Tesla's have all new protocols, all new software updates, all new, everything comes through the cloud and it's all standard. So any new protocol at all that we would have that would be approved would get after it's approved, would go into the cloud, and then that's the new protocol across all of the systems.

What about facility-specific protocols? Yeah, Gili, so, and maybe Dr. Sanchez as well, facility-specific protocols, the capabilities?

[Gili Karniel] (46:10 - 46:16)
Sorry, what about specific protocols? To what was instead of protocols that we used?

[Joe Spratt] (46:17 - 46:24)

Yeah, if a group, if a physician group in a hospital, say, they would like to change a protocol.

[Gili Karniel] (46:27 - 46:50)
Yeah, it would have to run through us. It's not something that currently the clients or someone in the field can change at the moment. We are considering that they don't need to change protocols in the field, but it's something that we currently do not offer.

[James Futch] (46:52 - 47:04)
So you're saying the capability exists for a particular facility to change a protocol as long as they do it through you. Has that happened much with your existing base? I'm seeing an increased shake of heads.

[Gili Karniel] (47:05 - 47:19)
No, no, we currently use the protocol that we set in the system and only adjust the parameters as we discussed earlier.

[Joe Spratt] (47:22 - 47:29)
Dr. Sanchez may be able to weigh in on this a little good morning.

[Dr. Orestes Sanchez] (47:30 - 48:36)
This is Dr. Sanchez speaking. The company has worked very hard to establish some baseline protocols for the different body parts and consideration of size, but the entire premise behind the system is to be able to obtain very detailed useful information in established positions using established clinical protocols across the world. obtain images in anterior, posterior, anterior, lateral, oblique, and as necessary.

This system has built in a number of photographic slices for each different area that we're scanning, and the resolution is calibrated for the area that is being examined. I hope that helps.

[Zach Friis] (48:39 - 49:03)
This is Zach Friis. I've got a couple questions. The first one is more for the state.

Do you have an SOP for testing this yet? We don't get a copy. I was just looking over the technical specs.

I know I've seen some of your inspectors out in the field. They use the same meters we have. I don't think it would work for this device.

[Clark Eldredge] (49:15 - 49:32)
What is your target for your tubes? Gili?

[James Futch] (49:33 - 49:43)
Gili wants the tubes. I don't know. don't know.

[Unknown Speaker] (49:46 - 49:53)
I don't I don't know.

[James Futch] (49:53 - 49:59)
I don't I don't know.

[Gili Karniel] (50:00 - 50:30)
I don't know. I don't I don't know. I know.

I want to and do it. don't of the Yes, it's the same spectral energy that we get from the room next door. I think it was another question.

[James Futch] (50:30 - 50:37)
There's one more question I guess we could use. Have any of these scanners been accredited by ECR yet? Have we got a look at that?

[Gili Karniel] (50:42 - 50:42)
Yeah, please.

[James Futch] (50:42 - 50:48)
Have any of the scanners been accredited by the American College of Radiology? We're working with them.

[Gili Karniel] (50:48 - 50:49)
Or similar. Yeah, we're working with them.

[Mark Seddon] (50:49 - 50:57)
But for what? For what? What modality would it be considered?

Tomosynthesis. Tomosynthesis.

[Gili Karniel] (50:58 - 51:00)
No, not that.

[Chantel Corbett] (51:01 - 51:02)
That's not a modality.

[Mark Seddon] (51:02 - 51:04)
Yeah, that's not a modality that's accredited currently.

[Kathy Drotar] (51:04 - 51:04)
Right.

[Mark Seddon] (51:05 - 51:09)
Yeah, that's what we're literally in discussions with them about.

[Chantel Corbett] (51:09 - 51:11)
Creating its own modality.

[Gili Karniel] (51:12 - 51:31)
I think I'll pass the presentation to Dr. Spanchers to cover a little bit about the clinical benefits of the ART. So, Dr. Spanchers, do you want me to drop the share or do you want me to?

[Dr. Orestes Sanchez] (51:32 - 54:20)
Why don't I drop the share? Hopefully, the images that I have already selected haven't timed out, so we'll see. Okay.

Okay. All right. So, my name is Ernesto Sanchez.

I'm the clinical advisor to NADAC. I was a practicing radiologist for 43 years before I came on board to help them with their product, both development, indications, and quality control of the imaging. So, as Gili is very well adept at the technical part of the presentation, I'm, on the other side, more clinical.

And the short version, because of the way that the technology and the science take nature, we're able to obtain our imaging in a very efficient and rapid fashion. Any of you guys, like myself, I trained on linear tomography back in the late 70s, early 80s, and it was a laborious, frustrating, although very useful technology. This basically takes the same concept and has supercharged it, so that the entire process of obtaining 60 to 130 images, however the protocol that was determined for the body part, it's between 30, 35 seconds for the entire acquisition, which is incredibly efficient for what we're doing.

I had a couple of studies that I think could be very helpful, if I can just find them. But, again, the entire concept is, we'll start out with something as simple as vertical bind, and, or even better yet, let's see. Yeah, yeah, you know, I timed out, I've got to bring this back up again.

Sorry folks, but that's computers at work, so... Take your time, Doctor.

[James Futch] (54:20 - 54:21)
We've got plenty of it up here.

[Adam Weaver] (54:24 - 54:25)
Thank you.

[Gili Karniel] (54:40 - 54:46)
So, in the meanwhile, I think that in fact I'll cover something about the place of homosynthesis in the images.

[Mark Seddon] (54:57 - 54:59)
Well, we still have a question about the detector.

[Dr. Orestes Sanchez] (55:00 - 55:02)
You got it? Okay. Gili?

[Joe Spratt] (55:02 - 55:09)
Yeah, I'm still having a problem. Gili? Yeah?

We have a question about the detector.

[Mark Seddon] (55:09 - 55:14)
So, do you guys use third-party detectors, or do you have your own detector design?

[Gili Karniel] (55:14 - 55:35)
We use the screen detector that any fluoroscopy system is using. We just need a conventional 17 by 17-inch dynamic detector. We use the one from Viewers, and we have Viewers as a company.

It's the same one that you use for fluoroscopy or even sealant.

[Joe Spratt] (55:39 - 55:40)
Thank you.

[Adam Weaver] (55:43 - 55:44)

So, that's just how they get their image.

[Dr. Orestes Sanchez] (55:48 - 1:00:52)
Okay. Can you folks see this image? Yeah.

I'm not sure if you can share. I'm not sharing? Oh, my apologies.

I was trying to get... Ah! Let it be scanned.

There. Okay. So, this is an example of one of our scans.

The patient has an external fixation hardware, and we will sequentially go through the entire external hardware, identify the patella fracture. There is no metal artifact whatsoever in the entire projection. And we're able to scan, again, purple results through the entire knee, from back to front.

It's great for metal. It's great for artifacts. And, again, just an example of what we can do with metal.

Also, it's... No, let's see. It won't work now.

Ah, okay. Good. So, this is a patient with a suspected left hip fracture.

And, obviously, overweight, which would make a regular 2D study somewhat suboptimal. But in this case, we're able to go through the entire hip and pelvis and identify a hip fracture, which would have been totally... would have had a complete miss on the regular 2D traditional x-ray.

And this lady probably could have... At this point, she gets a rod and a plate, easy fixation versus a potential total hip replacement. Also, at the same time, we can also do this to look at the chest.

And old-time tomos, very popular for chest. And, once again, this is a normal chest x-ray. I didn't want to put anything that had the word pathology on it.

But we can scan from the ribs, thoracic spine, scapula, shoulders, little eclipses here. Beautiful appearance of the lung fields, down to the diaphragms, trapezoid brine in the tree. So the issue even of underexposure would be that technology also protects against that.

So we're able to examine the entire chest from the back in such detail that is... I don't know. It really got me.

I thought it was the best thing in the world. The thing there is we're looking at somebody with renal collars. We're able to evaluate the abdomen.

And most patients get a CAT scan when they first go to the emergency room with renal collars. But do they really need to have repeat CAT scans just to follow the passage of the kidney or ureteral calculus? Or can it be done with an arc?

And this is one patient with multiple stones in the kidney. And again, it's a very efficient methodology for following patients. And as I said before, at lower...

overall lower dose. And I think the level of... I just want to see more of that.

Okay. Plenty of cases. Okay.

Yeah.

[Joe Spratt] (1:00:53 - 1:01:01)
I review almost everything that is done. Dr. Sanchez? Yes.

We have a question.

[Randy Schenkman] (1:01:01 - 1:01:14)
How much lower dose is one of these scans, let's say of a chest or anything you can compare it to, to the CT? Okay.

[Dr. Orestes Sanchez] (1:01:15 - 1:01:19)
Julie, you know, you've got the exposure figures, don't you?

[Gili Karniel] (1:01:22 - 1:02:49)
And you're going to... Sorry. Yes, I do.

I have one slide that discusses exactly that. So basically, as a whole figure, we say that a tomosynthesis is like one scan to the dose of a CT. For example, if you have an x-ray, which is roughly 0.04 to 0.1 millisievert, and regular CT, you have 2 millisievert, or 1.5 in normal CT. We, for one scan of tomosynthesis, we do between 0.1 and 0.2 millisievert. So it's just a few x-rays. So one has the dose of CT for the same body areas, and for other areas, it can be almost 60 times less, or 12 times less, or far, far, far less a patient dose of CT, and you get the same clinical value that Dr. Sanchez here is explaining, the improved visualization. You can see the bone fractures. I discussed the increase in supplemental. Again, it's all inside the system, and a fraction of the cost of the patient is the dose.

[Dr. Orestes Sanchez] (1:02:51 - 1:03:06)
Any other questions? It's a large patient, and the ability to evaluate the mental hardware in position is quite remarkable here.

[Mark Seddon] (1:03:08 - 1:03:18)
So for patient-size compensation, are your techniques manual, or do you have some type of AEC-equivalent feedback to adjust your technique on the fly?

[Gili Karniel] (1:03:20 - 1:03:59)
No, there is no AEC capability in tomosynthesis. The devices themselves are not fast enough to stop the radiation, because pair projection is very, very short and very low dose. If you tried to do it today, it wouldn't work.

What we do in terms of adjusting per patient, for example, we have the ability to choose, like in portable x-rays, you have the ability to choose the same type of normal patient, and that will change their technique factors for that same scan.

[Dr. Orestes Sanchez] (1:04:02 - 1:04:17)
I think one of the things that I think you may be alluding to is when we have a maximum table weight that we're, by FDA regulations, limited to.

[Gili Karniel] (1:04:20 - 1:04:27)
Yes, that could be 150 kilograms, so it's pretty complicated. It's 3.5 or so, yeah.

[Rosevelt Nheik] (1:04:40 - 1:05:00)

A question? Hello, yes. My question is, can the software take all the images and superimpose into a 2D image, like just a general radio graph, just as a comparison, so when you're looking at a tomo, you can also look at the 2D portion?

[Gili Karniel] (1:05:03 - 1:05:06)
Are you asking if we are able to generate a 2D image?

[Rosevelt Nheik] (1:05:06 - 1:05:12)
Yeah, are you able to superimpose all the information that's made into a 2D image to use as an extra?

[Gili Karniel] (1:05:13 - 1:05:17)
I would say that is a very, very good idea to do.

[Joe Spratt] (1:05:19 - 1:05:42)
So we are publicly traded. So I can speak to that. Oh.

We're not able, you know, it's... Well, we shouldn't speak for sure. That's why Gili's smiling.

Right, Gili?

[Gili Karniel] (1:05:43 - 1:05:45)
He doesn't hear anything you're saying.

[Joe Spratt] (1:05:45 - 1:05:57)
Yeah, yeah, yeah, yeah, yeah. And, Gili, do you have the dose comparison? We're going to show Dr. Shankman, we have comparisons for the different types of scans and the exposure rates and such.

[Gili Karniel] (1:05:59 - 1:06:01)
Well, I have this.

[Joe Spratt] (1:06:03 - 1:06:10)
Yeah, yeah, yeah. But there's a finer, more detailed one that takes the different exposures and such.

[Tim, Director of Ops for Nanox] (1:06:10 - 1:06:13)
The dose comparison marketing piece that we have.

[Gili Karniel] (1:06:14 - 1:06:21)
Ah. Wait a second. I need to pull it up and have this presentation.

[Unknown Speaker] (1:06:25 - 1:06:32)
Um... It's in there. Toward the end, we have something more detailed.

By different types of scans.

[Joe Spratt] (1:06:44 - 1:06:51)
The system plugs into the wall outlet. Same as your microwave, same as your phone.

[Adam Weaver] (1:06:51 - 1:06:52)
No special electrical?

[Joe Spratt] (1:06:53 - 1:07:00)

No special. Plugs into the wall. What's the max current?

Gili, what's the max current?

[Gili Karniel] (1:07:03 - 1:07:08)
I think it's either 8 milliamps or 10 milliamps. Power.

[Joe Spratt] (1:07:08 - 1:07:10)
Power, sorry, sorry. Power requirements.

[Gili Karniel] (1:07:12 - 1:08:38)
Power requirements, it's... Look, if we talk about other systems, for example, then we have, for example, systems... You should have an x-ray.

Actually, I can share with you. Wait a few seconds. So...

If you, um... Okay. So, x-ray systems can have, like, 70, 50, 70, 80 kilowatts.

And CT would have 100 kilowatts. Look at this. Less than 2 kilowatts.

For tomographic systems. Okay? And regarding the dose, this is what we wanted to show.

There you go. Okay, so this is a comparison of some body parts, x-ray and CT, and ACR reference parts, and our effective dose. Okay?

So you can see, for example, for extremities, we get 60 times less. And lumbar and hip spine, also very high-dose intensive. And scans, 12 or 16 times less the dose than CT.

Which is, I think, very remarkable.

[Mark Seddon] (1:08:43 - 1:08:48)
Another question. Do you guys accommodate two area of interest, or is it all multiple areas?

[Gili Karniel] (1:08:48 - 1:09:38)
No, no. We... Very good question.

12. No, we need to have the full... Because we're using multi-scores and multi-angles.

Okay? And remember, we have a shell of projections, like the one I showed you earlier on. We need to utilize the full size of the area of interest.

The full size and the full angles from each side, in order to lower the artifacts and improve the patient image quality. We have fixed SID, fixed image size, fixed projection size system.

[Mark Seddon] (1:09:39 - 1:09:50)
And talking about image quality, do you have, like, exposure index targets, or something like that, to know that you're utilizing the appropriate small, medium, large technique for patient size?

[Gili Karniel] (1:09:52 - 1:10:22)
Yeah, like, we have... In the training and user documentation, there's a reference for what we consider a small patient, what we consider a medium, regular, medium size, and what we consider a large. And the protocols align themselves with each one of those more thick characteristics.

[Dr. Orestes Sanchez] (1:10:23 - 1:11:13)
Over. Thank you. Relatively, last question.

You know, we don't think that we want to count down to the closest that we can have for the area. Unfortunately, when you're doing a tonal image, if you try to count it too closely to the supposed area of interest, once you start scanning the area, the SID may change, and you may actually get non-diagnostic images which are outside the field of interest, which will negate the entire value of the study. So, this is a hostage choice, where we'd love to have confirmation, but if we don't have confirmation, we may lose valuable information.

Nice story.

[Luis Rodriguez] (1:11:18 - 1:11:23)
I have a question. What sort of maintenance is required?

[Gili Karniel] (1:11:28 - 1:12:11)
Well, like in any other imaging system, you have this weekly, daily, monthly, and once-a-year maintenance. Usually, maintenance is only seeing that everything is... nothing leaks, and everything is bolted down and moving correctly.

The system itself also does built-in checks in every power-up. And maintenance is also usually just calibrations and any breaking, any bracing and that.

[Tim, Director of Ops for Nanox] (1:12:11 - 1:12:32)
Yeah, so this is Tim Dredge, who's actually the Director of Operations for U.S. NEDx. There's two PMs that are required, and the system does a calibration every single time it starts up. It is required to pass the calibrations in order to be able to scan.

So it does a QC every single startup.

[Luis Rodriguez] (1:12:33 - 1:12:41)
When it does the update, is it software automatically, or...? There are two different ways.

[Tim, Director of Ops for Nanox] (1:12:41 - 1:13:10)
It depends on what the upgrade is. For the software, in some cases, we do require calibration, which will require somebody to be on-site. But in many cases, we can upgrade the software and run a calibration from behind the scenes to ensure that it is done correctly.

What we have been doing up until this point is to be able to have somebody on-site in the event that we do have any issues. But the goal is to be able to do this remotely as much as possible.

[Luis Rodriguez] (1:13:11 - 1:13:24)
Okay. And are the institutions, do they have to... Like, the machine knows that it needs it, it's going to do it by itself?

Or it's going to tell, like, okay, it needs to be done?

[Tim, Director of Ops for Nanox] (1:13:26 - 1:13:36)
The PMs are done on a regular schedule, every six months. And again, the system is calibrated every time it is turned on. Okay.

[Unknown Speaker] (1:13:36 - 1:13:37)
Thank you.

[Tim, Director of Ops for Nanox] (1:13:38 - 1:13:55)
If there are any issues, we're monitoring it behind the scenes. We have views to all of the logs and actually can see potential issues before anybody that would be standing directly, touching the machine, would be able to see them.

[Adam Weaver] (1:13:57 - 1:14:14)
And how susceptible is this technology to surges, power interruptions, where you only have a 110 supply that may not be regulated and controlled very well? So how susceptible, particularly maybe with lightning or massive surges through a 110 line?

[Tim, Director of Ops for Nanox] (1:14:18 - 1:14:23)
I'm not sure. I couldn't really understand the question. Matt or Joe?

[James Futch] (1:14:24 - 1:14:37)
Adam was asking how susceptible is the machine to power fluctuations because the wall outlet may not be as well regulated as a regular X-ray supply.

[Matt Cohen] (1:14:37 - 1:14:39)
And then surges. And then also surges.

[James Futch] (1:14:40 - 1:14:46)
We sit in the lightning capital of the world as we sit here today in Tampa, Florida. So the question is about power.

[Joe Spratt] (1:14:49 - 1:14:58)
Timmy, I think they're asking about the UPS systems that we would recommend that we put through instead of just plugging it into the wall. It sounds great plugged into the wall.

[Tim, Director of Ops for Nanox] (1:14:58 - 1:15:45)
Oh, yeah. I mean, it can be plugged into the wall, but yeah, you're going to want to put... You would want to be able to put that into a system that would be able to handle power outage, although it doesn't require that.

It is recommended. I can show you real quick. I know somebody had asked previously about the power.

I figured I would throw this up for you guys to take a look at. So it shows the system power. It also shows the nominal electrical power that it takes 1.8 kilowatts, which is a toaster oven, the generator.

[James Futch] (1:16:05 - 1:16:07)
I can get this to you.

[Joe Spratt] (1:16:09 - 1:16:12)
Yeah, we'll share all of the specific details.

[James Futch] (1:16:15 - 1:16:23)
I believe we're making a recording of this. It should be available, if we succeed, along with all the other technology.

[Tim, Director of Ops for Nanox] (1:16:23 - 1:16:23)
Exactly.

[James Futch] (1:16:25 - 1:16:41)
It should be posted at some point in the next month. I guess, Dr. Sanchez, I don't know if we had... We kind of started talking toward the end of this talk.

Did you wish to go further?

[Matt Cohen] (1:16:42 - 1:16:45)
Dr. Sanchez, anything else you'd like to share?

[Dr. Orestes Sanchez] (1:16:53 - 1:18:49)
I was on mute. I can't put hand signals over the air. I think, overall, we've covered the technology, its radiation, and its technique.

I think, just to reiterate what I said before, this is a great technology that, in a lot of cases, answers questions. It does it in a very efficient and radiation-conscious manner and can provide answers for a lot of issues. One of the things I didn't show, and, unfortunately, I couldn't find it because my system cut it out, is the ability to scan through plaster casts and other very common objects we find in orthopedic practices.

Even from my own personal experience, the hospital that I was involved with for about 20 years, we had an orthopedic clinic that, every Wednesday, did, on average, about 60-65 extremity radiographs. At least two-thirds of them came back non-diagnostic with the vast majority of the radiation being picked up by the cast and, as you know, a lot of scatter from the cast and then increased surface dose for no value whatsoever. They have to repeat the x-ray, take the cast off, and, overall, we're just adding unnecessary radiation to patients that don't need it if we were using something like the ARC that just lasts in the face of artifacts and obstructing objects.

Thank you.

[Adam Weaver] (1:18:54 - 1:19:07)
What about room shielding? Since this is a more directional x-ray than a conventional x-ray, do you have any recommendations or studies on that? Because I'm sure that would be coming to play.

[Joe Spratt] (1:19:10 - 1:19:13)
Tim, did you hear that question? Room shielding?

[Tim, Director of Ops for Nanox] (1:19:13 - 1:20:03)
I heard room shielding, which is why I put my camera back on. The way that we have actually worked with physicists locally here in the New York area to be able to help set protocols for understanding what the shielding is required, because it is all scattered, the rays go straight down into the detector, there are no direct requirements. If the room is big enough, if it's 14 by 14, we've actually shown through the physicist testing that shielding is not required.

And when we do have smaller rooms, the most that the physicist has come up with is a 2-pound lead as opposed to the traditional 4-pound lead for a standard x-ray.

[Mark Seddon] (1:20:04 - 1:20:06)
Do you guys provide a scatter map?

[Tim, Director of Ops for Nanox] (1:20:08 - 1:20:52)
Yeah, we do, and we have plenty of physicists or I have physicist consultants that can be able to help explain. I will tell you that, I'm not sure who asked that question, but I have had many discussions with large physicist groups around the country to be able to help them understand what we have. Folks showing up and going, okay, I want to do a standard test, and then look at it and say, I don't know how to do that because there are five tubes, how do I isolate them?

So there is some teaching and some training and some learning that we have to be able to do some hand-holding, at least at the beginning with the physicists. It doesn't take long, it's pretty straightforward, but it is very different from a traditional x-ray.

[Mark Seddon] (1:20:54 - 1:21:11)
Does each tube have its own light field, or how do you know exactly where the field of view is for each individual x-ray tube? I didn't hear the question, Matt. For each individual x-ray tube, is there a light field or something to identify where your field of view is or is it...

[Tim, Director of Ops for Nanox] (1:21:11 - 1:21:27)
So we have software, I don't know, Gili, if you can explain this, but we have software that actually isolates each individual tube for projections, and then that is calculated based on the expectations of each individual tube.

[Gili Karniel] (1:21:28 - 1:21:52)
Okay, that's a service-level capability that we're able to count and power each tube individually, but again, each tube, you talk about light field, they all have the same projection area. They all have the same 17x17 inch projection area that corresponds to the detector.

[Clark Eldredge] (1:22:01 - 1:22:19)
Okay, thanks. So, extrapolating from that, there's probably a fixed sort of isocenter to your arrangement in your system, where you know where the center, where all the tubes are intersecting, to be, you know...

[Gili Karniel] (1:22:23 - 1:22:24)
I heard isocenter.

[Tim, Director of Ops for Nanox] (1:22:25 - 1:22:37)
So the detector, all the tubes pointing obviously directly down to the square Gili was talking about, the detector straight down. So, I'm not sure I understood the question.

[Gili Karniel] (1:22:38 - 1:23:01)
Yeah, short answer, we don't have a formal isocenter, I think it's not defined because we don't have a place where the detector itself and the tubes are... There's no axis of rotation in terms of like CD. If anything, it's positioned right at the center of the detector under the patient bed.

[Tim, Director of Ops for Nanox] (1:23:09 - 1:23:16)
Yeah, all of the tubes are pointed in or aligned in an arc to point at the detector.

[Unknown Speaker] (1:23:16 - 1:23:17)
Yeah.

[Kathy Drotar] (1:23:20 - 1:26:30)

Hi. This is Kathy Drotar and at Kaiser University Service Center in Tampa, we have prepared the room and we are expecting installation of the machine next week and the operation over the following week. They did a survey of our room, which is probably about...

12 by 20. And what we came up with was just shielding the wall to the adjoining room and we did standard just because of the high traffic area and then the one wall to the north of the machine just as a safe precaution. But the rest of the room did not need to be shielded.

We do have a control panel or a wall that we put up and that we did use because we're going to have a couple of other machines in there as well. So just, you know, extra precaution. But it's...

We have... We will be the first school in the United States to have the NanoMax machine in place so we'll be able to train our students and NanoMax is also going to be inviting people in to see the machine in operation itself and to do training there. So we're really excited about the prospect and bringing it, you know, something that I did as a student doing tomography and to see it reproduced in this fashion is just absolutely amazing.

The patient... The table is pretty stationary except for a north to south movement and so you position your patient and move them under the arc and then do the selection. And it's all with a handheld pad that you can take out into the room and there is one little control that is depressed for the entire time you're taking the exposure and they have stop buttons throughout a couple of different areas so you can stop it at any time besides having the stop on and the door opens in between.

But we're really excited about being able to introduce this kind of, you know, technology that is that in between because of the less amount of radiation and the information that gets provided which you've probably already seen some of that. But, you know, but really excited to be a part of this. We're developing curriculum now for training.

[Matt Cohen] (1:26:36 - 1:26:38)
I have questions.

[Adam Weaver] (1:26:42 - 1:26:49)
Which machine you're putting in? How many tubes? A full or a lot?

Five?

[Kathy Drotar] (1:26:49 - 1:28:00)
There are five tubes, five diodes and they all operate at the same time depending on the thickness of the tissue as it travels. The algorithms turn it off and on so that the thicker parts you'll use them like if it's passing over the chest or the level of the arms those diodes get turned off automatically so that you have depending on the thickness of your patient which diodes are being used and diodes themselves I don't know if I showed you a picture but I mean We actually have, yeah. Okay, yeah.

You know, when they came to visit us on campus and pulled that out it was also to the source for the machine is a 110 outlet. So, you know, and the generator I understand a newer version that isn't really going to be that cabinet but it's like just maybe about two feet tall.

[Joe Spratt] (1:28:00 - 1:28:23)

Yeah, it'll be all self-contained. There's a new version coming out and we're presenting it at RS&A that'll be all self-contained. Right now there's the arc and then there's a side power box three feet tall or so but it'll all be self-contained.

We'll see that in a month I guess, huh? At RS&A.

[Unknown Speaker] (1:28:24 - 1:28:24)
Yeah.

[Joe Spratt] (1:28:30 - 1:28:31)
Any other questions?

[Matt Cohen] (1:28:36 - 1:28:47)
No. Gili, Dr. Sanchez, Tim thank you so much for hopping on and helping us out. If we have any follow-ups we will definitely reach out.

But we're going to sign on from here.

[Unknown Speaker] (1:28:48 - 1:28:49)
Thank you.

[Matt Cohen] (1:28:49 - 1:28:51)
Thank you all very much. It's been a pleasure.

[Unknown Speaker] (1:28:51 - 1:28:51)
Have a great day.

[Joe Spratt] (1:28:53 - 1:28:55)
Thank you. Bye. Bye.

[Clark Eldredge] (1:29:02 - 1:29:05)
So, next week we're doing the...

[Randy Schenkman] (1:29:05 - 1:29:08)
Okay, we're going to take a five-minute break now.

[James Futch] (1:29:09 - 1:29:20)
Okay, so we have four more very short presentations from the MQA folks and we'll still be breaking lunches in so if you make it a little quick five minutes we can get out of here in time.

[Brenda Andrews] (1:29:22 - 1:29:29)
I don't know at what point I need to mention this. Josh gave me these scanners.

[Clark Eldredge] (1:29:29 - 1:29:39)
Who parked in the... Anybody who parked in the garage should know about getting out of jail free of card. Okay.

Yeah, that's fair.

[Unknown] (1:29:42 - 1:29:45)
If they turn on you, just keep that. Okay.

[Unknown] (1:29:46 - 1:29:53)
I'm giving you code. So, I think you scan first.

[Clark Eldredge] (1:29:54 - 1:29:58)
Here, take this. You have your sticker. Put it on your.

[James Futch] (1:30:06 - 1:30:08)
I'm sorry.

[Clark Eldredge] (1:30:08 - 1:30:23)
No, no. Yeah, was on the phone.

[Joe Spratt] (1:30:23 - 1:30:24)
Yeah.

LUNCH BREAK

[Clark Eldredge] (1:30:38 - 1:32:20)
…..environmental surveillance for the Cystal River power plant went from a quarter of a million to $20,000 a year. And that's... We are now just doing a limited sampling because they do still have the fuel stored on site.

So we are monitoring. Yeah, we'll be environmental sampling around that. As that, we moved a position out of our surveillance group into the emergency response group.

We've been continuing our coordination with out in the Orlando office training partners, whether the FBI, CSTs, which is the National Guard, and now the U.S. Air Marshals. They've come... We provide the radiation detection and response training to them, as well as our normal stuff with fire departments, emergency response groups, Florida.

Our trainers are gone basically three weeks out of the month going out to different fire departments and things around the state to train them on radiation detection and response. We actually had the NCRG 108 course. We were able to host that, which was their inspection course in Tallahassee.

So we had... I mean, in Orlando. So it was good for our folks, as well as we brought in a few people from around the country to attend that course.

We also had the DHS CTOS ROSS course. CTOS is the Center for Terrorism...

[James Futch] (1:32:22 - 1:32:24)
Counter Terrorism Operations Support.

[Clark Eldredge] (1:32:24 - 1:34:09)
Yeah, Counter Terrorism Operations Support, CTOS. ROSS is Radiological Operations Support Specialist. So this is a national program where they get skilled folks in radiation protection to volunteer to become experts to support...

In case there is something like that, it provides nuclear device and nuclear detonation in the country or other radiological dispersing device or a nuclear power plant so that they have additional folks to support

and guide decision makers in how to respond to any of those things. We had about 28 people in the class, of which 8 were from around the country, a couple from other private groups in Florida, and then the next, of course, the dozen or so that were actually from our group, our people to participate in that. One thing coming down the pipe for all of us is how the NRC is going to approach fusion in small nuclear reactors.

That's something we'll have to worry about for trying to get on board with rulemaking and actually need some legislative assistance with doing the green stuff at some point because while technically our current requirements for our current authority over particle accelerators actually would have us license a fusion reactor, I don't think our current licensing or registration fee for particle accelerator would actually be able to even begin to cover the efforts we would need.

[James Futch] (1:34:10 - 1:34:12)
I'm electing Lisa to go inspect it.

[Clark Eldredge] (1:34:17 - 1:36:28)
NRC actually is in the middle of that, even if it's interpreted their regs and whatnot to cover fusion reactors, so they're actually going to be working on rules and regs themselves on that. And then, of course, we have the various add-ins in nuclear power itself with some new types of fuels that are out there, the designs for the different scales of modular and then small reactors. I will say that some of the concept videos out there for some of the micro-reactors are rather scary.

Not that the systems aren't great and the technology's there, but they show somebody driving up with their semi pulling into a bay, docking the trailer, pulling out, there's your operating reactor, and you've got a concrete block building with a security fence maybe 10 feet away from the building, and I'm just going, what a soft target. And it's not that it would be any, if somebody did put a large bomb next to it, it's not like what they're planning for fuels and things like that, it doesn't mean there's going to be some huge radiation spread or impact, but the perception in the public is just like, no, somebody puts something next to that, blows up one of those, you know. And the other issue is some of the discussions for the potential for licensing more like a generally licensed device, the fact that it's going to be a package system from the manufacturer, they're going to be fully responsible for delivering it, setting up, collecting it back and cleaning it up afterwards, you know, because it's going to be a sealed system, you plug in and put your power cables up to, and then they, and it's like, there's some large company, all of a sudden there were six of them, the next thing we know they're sitting at their plant and nobody told us, like we have other generally licensed devices?

No, you know.

[Joe Danek] (1:36:28 - 1:36:33)
How many megawatts are you talking about? It's like a micro-unit, isn't it?

[Clark Eldredge] (1:36:33 - 1:37:17)
Yeah, no, no, we're talking, the small modulers are in kilowatts, kilowatts, and so this is even smaller. Yeah. So this is, as I say, a small sealed system, back and trailer, so it's a small kilowatt system or up to putting up them together, but they, you know, they say they'd be good for remote outposts or set up a bay of them and you've got your AI system to support a large server farm, that type of thing.

Yes. Yeah. So, you know, yes, every Amazon warehouse will have one for your network power, you never know.

[James Futch] (1:37:18 - 1:37:20)

More likely data center for AI.

[Clark Eldredge] (1:37:21 - 1:39:49)
Data center, yeah, but it's like, you know. CRCPD has started collecting your data for the NCRP update to the dose to the public, excuse me, medical dose in the US. We have not started torturing you all with that yet from our side, but it is coming.

We're trying to make it easier for our people because apparently the CRCPD wants the inspector to go online and fill out an online form and we're trying to build it into our inspection process so our folks will just have to fill out something less and we can upload it all at once to CRCPD rather than having them. But for large facilities, claimants will get a questionnaire ahead of time saying, please tell us about, you know, what imaging you're doing, how many of each, what are your standardized doses for your facility, what are your reference doses you're using for your imaging and that's what we'll use versus smaller clubs will actually take the measurements off our own measurements we're doing. Okay, let me pull that up real quick.

One of the executive order, we're going to talk about EMAX, which may or may not have the thing where direction happens with it, right? Okay, so executive order 14300 directs the NRC to reconsider its alliance on linear no threshold and its ALARA for radiation protection in the U.S. This was targeted primarily, of course, this is all part of the current administration's push to accelerate the previous Congress' and accelerate previous Congress' administrations advanced nuclear clean energy act which passed in 24th and the current administration is trying to accelerate that.

They have told the NRC to go through all their rooms in nine months and find a lot in, you know, re-slice and dice everything to bring it modern and by their definition within 18 months the output of the impact of this will be that there will be very short comment periods and they will be extended when NRC starts publishing the rules the proposed rules.

[Tom Morgan] (1:39:49 - 1:39:53)
Can they even do that legally? Excuse me? Can they even do that legally?

[Clark Eldredge] (1:39:55 - 1:40:06)
Yes. Well, I mean, they've got standard minimum comment periods. Correct.

They just haven't enough they'll need that but they will, you know, frequently if there's enough questions to NRC, they'll say, OK, we'll give you another 30 days.

[Tom Morgan] (1:40:07 - 1:40:09)
Shortening the comment period.

[Clark Eldredge] (1:40:09 - 1:40:23)
Not shortening. Be minimized. I don't mean it would be shorter than normal.

It's just a lot of times they extend their comment periods that won't be happening. Because, you know, for some folks you actually have to have 15 people review your comments before you can actually submit them.

[Adam Weaver] (1:40:25 - 1:40:35)
Because there's another executive order that shortens comment periods and review periods. So, where are we all coming?

[Clark Eldredge] (1:40:44 - 1:42:37)
So, what was I looking for? Just a little bit of a cut out here. So, the recommendation in the executive order or the guidance in the executive order was adopt science-based radiation limits in particular the NRC shall consider reliance on, shall reconsider the reliance on LNT and ALARA and consider determinant radiation limits.

Which, when I first read that, I was like going, what use of the word determinant is that? Because, you know, if we're talking deterministic effects, we're considering limits all, you know, based on, but no, determinant just means fortunately with that done it's been set a number rather than, because that scared me when I first read that. So, we're going to all set it at 50 rem to fit the low threshold for determinant, determinant disinfection.

Yeah, yeah, yeah, exactly. Yeah, no, no, it does say, it does apply, just set a number rather than. Yeah.

I'm actually, the, I'm supposed to be part of the Organization for Human Safety group. I volunteer to be one of the folks that is part of the NRC when they wanted to talk to us about where they're going with this and originally it was supposed to be one week after the ALS meeting that was held in August in B.C. and nothing's come up, they haven't even started any comments, but, so, we don't know where, yeah, when they're going to be around actually opening up that discussion and what to do about it.

[Adam Weaver] (1:42:37 - 1:42:38)
They're not working on that.

[Clark Eldredge] (1:42:40 - 1:44:21)
No, they're not, they're not. And I don't know if this, if there will be an allowance for the number of days the, if the executive order would be extended by the number of days it's going to get shut down. Okay, anything else?

Oh, going back to to Elaine and Lab Group, we do continue our support for PR&E, Preventive Radiological Nuclear Protection missions. Next week is it? Or the following week, we've got folks getting down to the International Bunk Shelter in Fort Lauderdale.

We'll work with security there looking to make sure nothing, trying to sneak anything nefarious. We have not, we've, we have not been able to make it to Daytona the last two years. That speaks to the 500, because of the cost of hotels, and actually having the budget to support those.

So that's, that's interesting. The Cal Lab there, about five, six years ago, was monitoring, was calibrating about 4,000 PR&Es, et cetera, for all the, hopping up all the police and fire department stuff in Florida, any group in Florida that had them. They're up to 8,000 to 9,000 here now.

It's over a five-year period. It's about doubled. Wow.

And they've been able to keep up with it. That covers all of those that we've talked about. So things are going well in the Orlando Lab.

They're keeping a lot of it going. Any questions?

[Dr. Orestes Sanchez] (1:44:28 - 1:44:28)
No?

[Randy Schenkman] (1:44:29 - 1:44:32)
Okay. Moving along. Lisa.

[Lisa Gavathas] (1:44:33 - 1:49:35)
Okay. So, right now, we're in the worst time of year for our X-ray program. We're in our renewal season.

We sent out 21,282 invoices that are all due at the same time. Everybody expires. Everybody in the state that has X-ray expires October 28th.

Right now, we've got the online payment system, which has been tremendous help. We've received, as of last Friday, $1,170,641 out of the invoice total of $3,058,494, which is 46%. I just checked a few minutes ago.

We're at 49%. At 50%, we have a party.

And 70% of our payment so far has been online, which is outstanding. Last year, we had a total I think of 54% by the end of the renewal season.

We're hoping for at least 55%, 60%. If we get 65%, we really are going be elated. But that's working out for us really well.

Let's see. MQSA, this is like the first year in quite a while that we haven't had a lapse in contract. This is option year three.

As you know, the MQSA mammography contract with the FDA is a five-year contract. You have your base year, and you have option year one, two, three, and four. We're in option year three now.

It started September 26th, and that's going really well. From option year two, I think we had 630 facilities. We have 628, and that's the only difference, and that's the reason they do it every year is to see if that number changes.

And that's the number of contracted inspections we have. So this year we have 628. As of last year, because of changes in facilities, I think we inspected 95% to 96% of the facilities we were contracted for, we try to get to 96%, 97%.

So we're right there. But there's no lapse in contract, which makes it easier when you're doing the workload for the following year because you don't have to readjust the workload. And I think you guys have met Camilla Guy.

She's come here in my place once or twice, and she took over my MQSA program. So she's doing a real good job keeping the inspectors on their toes. That's pretty much for the statistics.

I do have a list. If anybody was interested ever to find out how many facilities in each category we have, like how many accelerator facilities, how many podiatry centers or chiropractic centers or whatever, I have that list here. If anybody wants to know, you can ask me later, or I can send you a copy.

We do have a couple of topics for discussion. In our regulations, we've got challenged a few times by interventional radiologists wanting to discontinue use of dosimetry. The regulations state if you expect to receive more than 10% of your annual occupational dose, you are required to be monitored.

It's kind of subjective, right? I mean, well, you know, unless they have dosimetry. And this has become a national thing, too, but we got challenged by somebody in the state because it also says that when protective clothing or devices are worn on portions of the body, we've read it before as you're required to have dosimetry.

But it actually states in the regulations and a personal monitoring device is required. So it doesn't specifically say if you're using fluoro, you have to have dosimetry. So that is something that I'm just bringing in here for you guys' attention because if we're making changes to the dosimetry requirement or if you want to allow discontinuance, that's not something that I can decide on, so I guess that's what you're here for.

That is one thing. There was another issue when I was doing a little more digging into the regulations from reading the regulations, not that I haven't read them. Fluoroscopy, it does say that if you're using photographic devices, you are required to have dosimetry.

But I don't know how many people are using photographic, right? I mean, it's kind of an outdated system, right? So that's something that might be able to be removed.

It's something else you can think about.

[Mark Seddon] (1:49:36 - 1:49:49)
There's probably a big push to there's a Shed the Lead initiative coming across the country right now to eliminate the requirement to wear LED aprons instead to use more robust camera shields and animational clouds.

[Lisa Gavathas] (1:49:50 - 1:52:14)
Okay, if that's the case, I mean, it might be something that you consider. You know, they were, when we were on the call the other day, the, what's it, H11 committee call? CRCPD?

Somebody mentioned that they went into a hospital and their interventional radiologists were getting zero dose. But in my history of inspections, I've never saw interventional radiologists getting zero exposure. You know, so there's probably something.

And the people that we have that do get overexposures are usually contacting us saying, oh, we've got over five room, what are we, you know, this doctor needs to continue working. So they have to do an investigation. They have to determine what they think their dose was because they were wearing a vest, but they were, and so then we allowed them to use ED calculations.

So, anyway, I'm just putting this out there. Clark might have some more things to say about that because it's been a big topic of discussion. And I, whereas I believe that maybe one facility in the state is already, they're using, but anyway.

Our large facility in the state that has done between, they have different centers across the country. And they got done some studies where they were using this and how many, like, even when they did get dosed, how much were they actually getting whole body? Because ours is based on whole body dose, right?

So, and then they have records. I mean, if you go into, what I fear is that everybody's going to start claiming they don't have to have this demonstrated. And we're going to have a lot of people that are using Flora for pain management or know how much they're using.

A lot of people, a lot more people are requesting EDE calculations, which we allow. So...

[Clark Eldredge] (1:52:14 - 1:52:18)
You can't make your EBE calculation without a decimeter.

[Mark Seddon] (1:52:19 - 1:52:19)
Yeah.

[Lisa Gavathas] (1:52:21 - 1:52:26)
What I'm saying is they're using those, so now they're saying we don't want the dosimetry.

[Mark Seddon] (1:52:27 - 1:52:47)
So they're using the EBE calculation to show that their whole body dose is less than 10% and that it's being made so possible that they receive that. But you can use electronic decimeters instead of... Well, real-time decimetry, which is the other alternative.

And if you have some decimetry to verify that what your dose, you're receiving, that's common.

[Lisa Gavathas] (1:52:47 - 1:53:15)
And we've always had the question from people, does my nurse have to be badged... Do they have to be monitored? Does everybody in there have to be monitored?

But it's usually only a couple people that are actually close to the patient. And so we talk about worst-case scenario..

[Clark Eldredge] (1:53:16 - 1:53:41)
How do you control the people in the room to make sure they're the only ones getting the exposure? So that would take a fairly decent radiation safety program, along with either physical constraint or clear demarcations within the room to say, if you're not part of the procedure, you don't cross this line, something like that. And that would be reasonable, because we know the scatter from the flora system doesn't go that far.

[Mark Seddon] (1:53:41 - 1:54:22)
Yeah, but the problem, too, is that every room is unique, and that's how we approach the use. Although, in those who do a lot of interventional cases, it's changed a lot. And your PPE versus your cardiovascular versus your blood work, they're all different.

And there's some approaches that your dose is inherently higher versus other based on individual. So it's very hard to generalize and say that no interventional radiologist is required to have, or a cardiologist is required to wear a badge because you cannot receive, exceed 10%. Because we see that all the time.

We're changing. The practice has changed. The equipment has changed.

And if they have a new doctor.

[Clark Eldredge] (1:54:22 - 1:54:31)
The individual technique between people, that's the, actually, yeah, that's the big, for our experience, that's really the biggest determiner. You have a heavy patient who's going to get more scattered.

[Mark Seddon] (1:54:31 - 1:54:32)
Right.

[Lisa Gavathas] (1:54:33 - 1:54:40)
And it depends on the individual radiologist, as well, how they're practicing. They may not be as conservative with...

[Mark Seddon] (1:54:41 - 1:54:43)
How they use it.

[Adam Weaver] (1:54:43 - 1:54:48)
Yeah. Well, as you said, anything would harm the patients. So the doctor could get more.

[Lisa Gavathas] (1:54:49 - 1:55:04)
So the question becomes that, do we need to make changes to the regulations or attempt to make changes to the regulations to require the dosimetry for any fluoro use? Or do we not? That's the question I'm presenting.

[Randy Schenkman] (1:55:04 - 1:55:06)
I just thought it was required.

[Clark Eldredge] (1:55:10 - 1:55:31)
Well, this is a 10% rule, and common sense is the people in flora are getting 10%, but there we have, again, facilities going out there saying, no, look, we're not getting 10% of our flora. And we're also going, how are you not? That's a good question.

How are you not getting there with any of your people? Because if that's true, then you need to train everybody else on the planet.

[Kathy Drotar] (1:55:34 - 1:55:50)
When my students' symmetry reports come back, you can tell who's been in flora or been in IR because those doses are three to five times higher than the ones that aren't measurable at all because they've been in a regular room.

[Lisa Gavathas] (1:55:50 - 1:56:03)
The same with inspectors. When I was an inspector, and I would do a lot of C-arms because I was in a hospital. Then you're down there looking, trying to see the light field, so you can see where the... Being closer to the tube is the only time I've gotten dose.

[Mark Seddon] (1:56:05 - 1:56:11)
And my physicians traditionally are very poor at wearing their badges. And that's just kind of gone.

[Lisa Gavathas] (1:56:12 - 1:56:18)
And some don't want to wear their aprons either. Well, that's what I'm saying.

[Mark Seddon] (1:56:18 - 1:56:20)
That's the big push right now is to not wear the aprons.

[Randy Schenkman] (1:56:20 - 1:56:22)
What is this other thing you're talking about?

[Mark Seddon] (1:56:22 - 1:56:58)

There's a big push right now in the CB and IR world to stop wearing the aprons and instead purchase these more advanced... There's a couple companies out there that sell more advanced shields than the regular Mavic shields that you have. You've already got shields and drapes on the table.

It's more like a wall of lead you put between you and the patient and scatter it. So at least the people at the foot of the table with their operators standing there to protect the system, they're being fully protected. So they don't need to wear a lead apron based upon the measurements shown.

There's like four or five different companies out there that are pushing that.

[Randy Schenkman] (1:57:00 - 1:57:01)
The radiologists would have to.

[Mark Seddon] (1:57:01 - 1:57:15)
No, they wouldn't because they're fully behind a lead barrier. In essence, it's a really big... It's eliminating the scatter.

Yeah, it's like a mobile barrier but it actually has drapes on it and has like, you know, folds out.

[Clark Eldredge] (1:57:15 - 1:57:24)
Yeah, some of them are counterbalanced on cables and things so you can move it and position it.

[Lisa Gavathas] (1:57:25 - 1:57:28)
The table should have drapes anyway.

[Mark Seddon] (1:57:28 - 1:57:41)
Yeah, but this is a non-approved drape and that should have like little shields that go up on the side, I guess, of patient effort. Because that's really where your scatter is for the operators from the gap between the overhead and the drapes on the table.

[Lisa Gavathas] (1:57:41 - 1:57:49)
And the scatter is not that... I mean, like the C-arms, the scatter is not... Well, I mean, the scatter radius, whatever.

Yeah.

[Mark Seddon] (1:57:50 - 1:58:17)
The majority of it is backscattered before it's a tube, right? So that's where most of it, under the table, back towards the suit, based on how you scan it. You know, based upon...

I should say the equipment makes a big difference as far as, you know, if the physician's standing on one side of the patient and they're on the tube side and the doctor mentioned that's tar side. You know, that's a good sign, how much scatter they're receiving as well. So, just scanning outright that every room doesn't require patching is not true.

[Rosevelt Nheik] (1:58:18 - 1:58:30)
But that's if you... That's if you use it. Do you know how many shields are in the IR room in every place I've worked at?

Maybe a handful of times that they use it.

[Clark Eldredge] (1:58:31 - 1:59:01)
I mean, currently, you know, we've required that to hold a tube in your hand, you've got to be batched. Because you don't know if, while it's designed properly, what goofy thing's happening when you're doing ergonomically whatever. And I think the same thing applies with this, that you don't know when something's going wrong.

You won't know unless you're batched. Unless you're measuring it, you don't have a clue if somebody's doing something stupid. Or something in the layout of the room is not being accounted for.

[Mark Seddon] (1:59:02 - 1:59:21)
We see that those systems selling the more advanced shielding that you eliminate the requirement from the more lighted rooms, they also sell those with the real-time asymmetry systems. So you actually can see, make sure that you actually are protecting yourself by how you position everything. So that you can turn...

[Unknown Speaker] (1:59:26 - 1:59:26)
Those aren't NVLAP accredited.

[Mark Seddon] (1:59:28 - 1:59:48)
No, not NVLAP … No, it's not offical. Except where Your badge is, you know, monthly or quarterly, but at least this tells you in real time as you're doing the case, you know, oh, I didn't position this properly. So that way, it gives them more confidence that they don't need to wear it and they're all separate and you can just use the various...

[Adam Weaver] (1:59:48 - 1:59:49)
You have some media feedback.

[Lisa Gavathas] (1:59:49 - 2:00:02)
But you can't require it, so how do you... How do we keep... Is there a change that can be made to either have either or?

I mean, because right now, they're... They've been quiet.

[Kathy Drotar] (2:00:06 - 2:00:20)
The question is about cumulative gifts, because now you're talking about singular incidents of being in the room at that time. But, you know, if there is some radiation, then it's going to be cumulative, and how is that affected?

[Mark Seddon] (2:00:21 - 2:00:25)
Yeah, and I think if they still go back to having their own personal is the best way.

[Kathy Drotar] (2:00:25 - 2:00:26)
So you can't really do it.

[Mark Seddon] (2:00:26 - 2:00:28)
You can't verify what your own natural dose is.

[Adam Weaver] (2:00:28 - 2:00:31)
So you can wear it properly. Yeah, so you can wear it. Or wear it if you don't want to.

[Mark Seddon] (2:00:32 - 2:00:40)

I don't think there's something... Is there a requirement to provide an annual form 5 or annual summary to... Is that one of the requirements?

[Lisa Gavathas] (2:00:40 - 2:00:49)
That is a requirement if you provide the dosimetry. If you're required to have the symmetry, then you are required to do it. But if you're not required, then there is no reporting requirement.

[Mark Seddon] (2:00:49 - 2:00:52)
So it's kind of circular. So everything circles back around itself.

[Lisa Gavathas] (2:00:52 - 2:00:52)
Right, exactly.

[Mark Seddon] (2:00:53 - 2:00:55)
So just that, when you're required to have it.

[Lisa Gavathas] (2:00:55 - 2:00:58)
So we've always used the argument, well, if they...

[Mark Seddon] (2:00:58 - 2:00:59)
Good.

[Lisa Gavathas] (2:00:59 - 2:01:22)
It's like a liability issue. We've always used... We always threw that term.

It's a liability issue if you don't provide, and something happens, you have no way to prove that they didn't get dose. That works for a lot of people, but if you have a big facility or a very...

[Kathy Drotar] (2:01:24 - 2:01:36)
Well, people that work at different facilities, too, because everybody doesn't work at the same facility all the time, and you don't know where that disk came from if you're not bound to each one individually.

[Randy Schenkman] (2:01:39 - 2:01:45)
I just want to change the language a little bit to require that...

[Lisa Gavathas] (2:01:46 - 2:02:18)
Well, one of the things you could say is when protective clothing or devices are worn on portions of the body, a person, take out the hand and put a personal monitoring device required, period.

[Adam Weaver] (2:02:18 - 2:02:19)
They're different thicknesses.

[Lisa Gavathas] (2:02:19 - 2:02:56)
Because they're massive. But, they, and a story, a quick story, I went in to do a veterinary clinic one time, and they had their control badge and all their badges hanging from the tube head. I asked do you always keep it here?

That was a first. Yeah, so, I'll tell you, okay, the person's wearing it, and the control's going to have more, so you're going to have minus radiation. That was interesting.

They're like, no, sometimes we take it and hang it on the wall and it's good.

[Mark Seddon] (2:02:56 - 2:03:10)
I don't want to tie it to wearing a lead apron because a lot of places you have requirements to wear a lead apron when you enter the room like an OR or something like that, but they don't, so it can be bad, but just if you walk into a room and you still want to have an apron on, that can scatter.

[Lisa Gavathas] (2:03:10 - 2:03:22)
I mean, people, folks who are in this space, Oh yeah, yeah, instead of, oh yeah, because that's what Kevin's saying, instead of using it for photographic, use it for map taking.

[Mark Seddon] (2:03:23 - 2:03:23)
Yeah.

[Lisa Gavathas] (2:03:24 - 2:03:27)
But that is something that, and it operates across the room.

[Adam Weaver] (2:03:28 - 2:03:32)
You just say image collection, any image collection.

[Randy Schenkman] (2:03:35 - 2:03:38)
Yeah, any image collection would be a good idea.

[Lisa Gavathas] (2:03:39 - 2:03:41)
So that's something we think about?

[Adam Weaver] (2:03:43 - 2:03:45)
Is that a covered digital aid?

[Mark Seddon] (2:03:45 - 2:03:51)
Is there examples of language from other jurisdictions that we're looking for?

[Lisa Gavathas] (2:03:51 - 2:03:55)
That is something I haven't looked into, but that's a good idea.

[Adam Weaver] (2:03:55 - 2:04:03)
What is the CRCPD? I know there's a lot that should work.

[Lisa Gavathas] (2:04:04 - 2:04:29)
Yeah. It's allowed at some facilities because they've been able to prove by their, they have a large, ongoing research initiative project going with them on the facility process, and they said they've been able to prove that they're not receiving more than 2%.

[Clark Eldredge] (2:04:29 - 2:04:33)
Well, they've been able to prove the badges aren't showing anything, not that they're not getting the dubs.

[Rosevelt Nheik] (2:04:38 - 2:04:39)
So it's the complaint.

[Sean Wilson] (2:04:40 - 2:06:37)

There's a couple of things that I had with that. One, that personal monitoring shall be for fluoroscopy. Just to change the language to fluoroscopic instead of photofluoroscopic, now you're requiring the physician who operates the equipment to have a badge.

And what Mark was talking about, we've installed these as well. The whole purpose of these additional lead shielding systems is to get the physician from standing there in one place for three complicated surgeries to get the lead off of them. And so, I've taken measurements, it's zero radiation exposure at the table side for the scrub nurse and the physician operating equipment.

And so, I'm authorizing them not to have any prints, but they wear a NADLAB or a real-time dosimeter like the Med-Dose from RBC or like the Miriam Instant Dose badges, so they can do readings immediately after and see what their dose was for that case. And compared to the real-time dosimeter that might be provided by the vendors, as an adjunct, we've got the standard that everyone has to protect it by scatter with...

[Lisa Gavathas] (2:06:38 - 2:06:48)
If you're in the room with a patient, you're required to be shielded. If you're required to be in the room, you're required to be shielded. But shielding doesn't specifically...

[Clark Eldredge] (2:06:48 - 2:06:52)
That covers both...

[Randy Schenkman] (2:06:52 - 2:06:54)
Either or.

[Clark Eldredge] (2:06:54 - 2:07:07)
That covers either or. So we could actually, we just need to add, so we drop the from the plural for stopping. We can ignore, we can get rid of that and or just say if you're dealing with plural, wear a badge.

[Lisa Gavathas] (2:07:07 - 2:07:15)
But, okay, but that's what I think Sean was saying that forces you to have that if you're...Well if you change it to and it would be.

[Clark Eldredge] (2:07:15 - 2:07:42)
But if you don't have the and and just drop any reference just say if you're using plural, wear a badge. That simple. Because again, they're covered by the other requirement for the shielding when you're in the room.

That means you wear an apron or you wear the mobile, you use the mobile system. If you're behind a shield of some sort, whether it's on you or whether it's the systems that are freestanding that get the weight off the dockers.

[Tom Morgan] (2:07:46 - 2:10:04)
So a couple of things, as far as mobile art and medical science, twenty-five percent of my people have had that problem. Some of these boxes that people are in are solving that problem for that one individual. But that's not solving the problem for the other dozen people who are in the room.

I don't know what this means or how to do this, but I would hope that at some point we can come to some appreciation about this serious problem. Really, it is a serious problem of repeating issues. The other thing is that, at least in my experience, that inspectors look for high doses on those orders.

They don't make any comment about the zero doses. Meaning, I had a hundred, at one place, I had a hundred physicians who were working at the hospital. Some of them had zero.

By the time I retired, I didn't get a chance to get to this particular department. That was practical. You go back and look at Dr. Jones, who has done five, and he does five interventional patients a week for the last year, and he had zero in bed. No, I don't think so. But I've never had an inspector challenge me on that. I don't know what the policy is about that.

Certainly, obviously, if you're overdosed, and patients were people who didn't keep their, you know, above the apron with all the apron badges on them, so if they wound up with an ED, it was way out of line, and I didn't report that. But something to think about for the future. Zero badge means zero relief means somebody didn't wear a badge.

[Lisa Gavathas] (2:10:04 - 2:10:19)
Yeah, that was our first question. When they said the whole hospital, nobody had badges. Nobody wore a badge.

Are they wearing badges? That was the question that came up. So, anyway, we should work on that.

[Zach Friis] (2:10:23 - 2:11:24)
One additional thing. I have a class with some of my clients at some of these surgery centers, because they legit have zero badges. When I go in and look at the procedure and how to watch them do it, it's three to five seconds per procedure.

They maybe have 200 procedures a year or something ridiculous. And some of these people have 30 or 40 badges. It's all zeroes.

And it's a legitimate finding. Sometimes, yeah. Sometimes, not all of them.

But you do have something sort of similar in your information notes when you file already when it was in the public. And that, if you had something staggered like that, like you say it's under 15 minutes each week or something like that, you could do the calculations and have something similar to that for badges. You're already doing the same thing from when we filed the test.

You could do as easy as 500 per year.

[Mark Seddon] (2:11:28 - 2:11:48)
It's more complicated. Rather than just saying they were out for the thoracic equipment, you have to show when you go in and remove the procedure. You have to follow the procedure and do a calculation to verify.

It's like some sort of requirement. You have to see your arms for the dose. Interventional is totally different.

[Randy Schenkman] (2:11:48 - 2:11:54)
But what's the big deal about wearing the badge?

[Zach Friis] (2:11:55 - 2:11:55)
Costs.

[Adam Weaver] (2:11:56 - 2:12:00)
They're very expensive. Costs are way up.

[Zach Friis] (2:12:01 - 2:12:18)
I had over 5,000 badges. About $10 apiece. Lost badges are around $40 apiece. And they're exchanged monthly.

So one month's bill is $40,000.

And the estimated was $5,000.

[Rosevelt Nheik] (2:12:20 - 2:12:29)
But I got 5,000 badges, so I'm sure the income is able to offset that.

[Adam Weaver] (2:12:29 - 2:12:43)
It's not reimbursable funds. I can't charge this to Medicaid or something like that. I have to argue with the whole class.

[Mark Seddon] (2:12:44 - 2:12:47)
Maybe send a query to the campus.

[Lisa Gavathas] (2:12:47 - 2:12:55)
Yeah, we could do that on the H-11 committee. Do a survey and find out. Send it out to all the states. And then we'll get responses.

[Adam Weaver] (2:12:59 - 2:13:02)
Get a national approach.

[Lisa Gavathas] (2:13:05 - 2:14:12)
And I think one other thing. We've been having a lot of trouble. I think the last meeting we talked about having CT facilities that didn't have a doctor's prescription.

And what have you. So we've had that issue. We've also had facilities that are very creative.

They came up with a radiation therapist assistant. Now the definition of the radiation therapist assistant was the exact same as a radiation therapist. So they were allowing the assistant to treat.

So that we've been seeing a lot of unlicensed activity. We've had general radiographers, but they were practicing outside their scope. And this is something that Kevin and I both have had issues with.

Because we've also had PET CT. With their med techs not even having their CT certification.

[Lisa Gavathas & Kevin Kunder] (2:14:18 - 2:14:27)
But they're also doing diagnostics. So there's a small doc in the box. They have that equipment sitting there.

So they have the new med tech coming on the weekend.

[Lisa Gavathas] (2:14:30 - 2:14:40)
So we're not sure how to go about all that. This has been a something that's something we've been seeing a lot lately. And it's usually from a disgruntled employee.

[Mark Seddon] (2:14:41 - 2:14:43)
You don't expect versus this.

[Lisa Gavathas] (2:14:44 - 2:15:51)
We do do an investigation. The previous one, it was legitimate. It was a legitimate problem.

And they actually took, we haven't investigated that yet. We're still working on the unlicensed activity. They were reported to have a medical event assumed alleged medical event.

And the two people on the machine were medically licensed. But we don't have all that paperwork. So this is something that we don't know if it's a new trend.

Or if it's something that we're just now catching. Or if it's something that's been happening in the past and we're just not and people didn't tell each other. Or something.

We don't know what's going on. So we're not sure how to handle this. But we investigate each one.

But because we all work in facilities, we might want to explain to them, you must be licensed for what you're doing.

[Randy Schenkman] (2:15:53 - 2:16:22)
Would it be worth sending out letters to say that multiple, you don't have to say how many, reports of this happening? And these are the rules. And please ensure that these rules remain followed.

Because we are investigating any alleged reports.

[Adam Weaver] (2:16:26 - 2:16:29)
He said on the notice, you should notice this.

[Mark Seddon] (2:16:32 - 2:16:38)
Are your investigations showing that there's lack of awareness? Or is that intentional?

[Lisa Gavathas] (2:16:38 - 2:16:54)
The manager was a therapist. And he was telling them, yes you can. And they were saying no.

And the other therapists were asked to work with the assistants. And they said no. So they had the unlicensed people working there.

[Kathy Drotar] (2:16:55 - 2:16:59)
Were they administering the treatment? Yes. Because that was the no-no.

[Lisa Gavathas] (2:17:00 - 2:17:54)
And my question too was, ask them to see the administrative page or log in straight. Because they were saying, oh no. The manager said, no they aren't doing that.

But everybody else in the facility, including the people that were doing it, said, yes we are. One of them had been doing it for two years. And so when our inspector went back, she asked to see who had logged in.

Because there's no need for an assistant to have a log in to the treatment. Right? And all of the unlicensed people had logins to the treatment.

And it also showed their initials on the treatment. So there's a lot of information. Plus the person that did it.

[James Futch] (2:17:56 - 2:18:05)
Were some of them from the They only failed three times.

[Lisa Gavathas] (2:18:07 - 2:18:21)
And they were in a remedial or something. They were general radiographers. They just weren't therapists.

And they were working in cancer services.

[James Futch] (2:18:26 - 2:21:46)
So historically this has come up a couple different ways. A long time ago, the Florida revised the statutes around 2004. We would get, there's a part of chapter 458 for the medical doctors.

Basically it's the way that they can use office medical staff to operate the office medical department. So the inspectors would go into a facility and report on that. Then the statute would change the practice of whatever modality they were looking for after trying for several years to get legislation to change it to include the rest of the practice.

The law is in chapter 468. What's adopted is the scope of practice and the practice standards are the ASRT practice standards. Circa 2017 for those professions.

And someone who actually takes the exam, let's say for a radiation therapist, and fails it, is specifically prohibited by another part of the statute from practicing radiation therapy. What this comes down to is proof in how the lawyers want to, and the society want to go to the case, to the types of numbers that we have on the abortion side. Which we don't this quarter because of that.

But we will submit complaints based upon the evidence that the inspectors will then join investigators to collect. And then we'll filter through the department to the prosecutors. The prosecuting attorneys will look at either unlicensed activity or they'll look at practicing outside of the scope and figure out which way they want to go.

And then they'll put a case together and work a problem across. And when they ask the problem cause, they usually get it. And if there's any question about it, someone can email.

Because due to their opinion, yes this is the scope of practice or this is not the scope of practice. And they're not clear of that. So they have to ask questions about how it's going to end up.

And the best proof is in a piece of paper where it says, here is your job description. And no human has to explain what this means and what they saw. Although that's good too.

But it says right here Jane Doe is doing all the things that radiation therapists do. If they even call it, that's where it should be.

[Randy Schenkman] (2:21:48 - 2:22:12)
But I still think right now maybe the best thing is to send a letter out or a notice out or whatever to make everybody aware that we are aware of this situation. And that it's going to be a big issue for them if they continue what they're doing. That they're gonna end up in trouble.

[Lisa Gavathas] (2:22:13 - 2:23:46)

In this particular case too was reported when they called our office and said, we have a complaint. Well all complaints are referred to the complaint line or MQA. So they complained.

MQA calls me and says, hey by the way we have this coming up. So we sent an investigator
I mean our inspector who also did a really good investigation.

I mean she went in and asked questions and it was all legit. So I called the MQA investigator back and said, hey we want to follow up. How did you how do you want to handle this?

Because he canceled on the inspector going out together. And he said, oh we already closed the case. And I asked why?

And he said, because they were licensed. I looked them up in their license and said, well they're licensed, but they're not licensed for what they're doing. And I don't think he understood that.

So, after we talked a little bit more, they reopened the case.
But, that's all I have, except I'm fully staffed now.

[Kathy Drotar] (2:23:47 - 2:23:58)
So, it's very interesting, Eric, your assistant, too, required a certain number of hours. It was like 60 or 600 hours. That's a whole other, that's a whole other ballpark of what Kenny and I did.

[James Futch] (2:23:58 - 2:24:08)
No schools are taking away from that. So, that was kind of a non-starter. I don't know if they were really planning on a non-starter.

[Randy Schenkman] (2:24:09 - 2:24:12)
But maybe that should be included in the letter, as well.

[Kathy Drotar] (2:24:13 - 2:24:14)
No, there's no.

[Randy Schenkman] (2:24:14 - 2:24:41)
What the technologist's requirements are, the facility requirements, the radiologist requirements, and the tech requirements. Does that hurt to let everybody know? Maybe, I don't know.

[Adam Weaver] (2:24:44 - 2:24:59)
Just a refresher based on lessons learned from Hanson, something like that, or if not, I'm sorry. I don't know, whatever, notice. Because I know you get notices from the NRC, but we don't.

All the time. Yeah. Yeah.

[Lisa Gavathas] (2:25:00 - 2:25:03)
And yeah, we can address it to all the registrants.

[Randy Schenkman] (2:25:06 - 2:25:16)
Second part of it is important, or something. So, it makes them wanna look at it, instead of just saying, oh, here's another one.

[Mark Seddon] (2:25:18 - 2:25:20)
If there's any information on us, that's important. All right.

[Adam Weaver] (2:25:22 - 2:25:28)
And, if you're being sent it off by email, so it won't be too costly, but I assume that.

[Kathy Drotar] (2:25:37 - 2:25:52)
And sending it out to, I know when you're talking about registrants, that you're also including technologists and therapists in that, because if they know that they aren't supposed to do something, they're less likely to do it for themselves in that position.

[Kevin Kunder] (2:25:52 - 2:25:59)
And if they got something like that, maybe it would get them to report something, too. If they're making me do this, I'm not supposed to.

[Kathy Drotar] (2:25:59 - 2:26:06)
Well, fiduciary duty, if you know something's wrong, report it, or you could go in and do this.

[Lisa Gavathas] (2:26:08 - 2:26:11)
All right, that's all I have.

[Randy Schenkman] (2:26:14 - 2:26:16)
Okay, so, okay.

[Kevin Kunder] (2:26:17 - 2:30:57)
Radioactive materials. Staff changes. Charlie Hamilton was one of my three evaluators.

We got his position open for probably about a year. We finally got it filled by Dr. Samuel Ajayi, recent graduate from FSU's PhD program in nuclear physics. We also lost Mike Stevenson, unexpectedly, a few months back, and I do have someone onboarding for that position.

He has experience with DOH rule development. And Joyce McElroy, which was our enforcement coordinator and manager, she took her third retirement last week. That position is now in the process of being posted.

Rulemaking, what we had previously sent, has been at a standstill with Office General Counsel, and their main changes are on hold until Mike's replacement starts, and they get him up to speed. An additional note, part of what Clark was talking about is the NRC was formally tasked with reducing the regulatory burden on nuclear industry while maintaining safety, a directive most recently highlighted by the ADVANCE Act last year, and the executive order in May of this year. It looks like what they've been talking about is there's gonna be some things that may be less of a burden, where they won't require certain things, and of course, we have to get through our requirements, which we can't get through the ones from 10 years ago yet.

Statistics, as of last month, we had 1,507 specific licenses with 222 general licenses, making a total of 1,729. Radioactive materials licenses, we continue to average close to 200 licensing actions a month, and close to 80 RAM inspections a month, and we process and turn into compliance and violation letters to our licensees. GL invoices went out May 1st, and were due back before July 1st.

As of today, we have received 92%, still have 12 non-compliance, and seven incompletes. Talked about before, there is a statute, section 17.20, that requires any state agency in Florida to turn over any delinquent accounts to a debt collection agency within 120 days. Since our new beginning of the fiscal

year, July 1, we've referred about 7,000 delinquent accounts to Transworld Systems, INC collections agency, and we currently have $222,000 uncollected from prior years.

Medical events, since last meeting, we only had one, and it was an underdose of Y-90. Due to the issue with the ordering, where they were ordering, in fact, they put the order in for two weeks out. I got that wrong, they put it in for whatever it was.

They put it in for one week, and they did it the other week, so it ended up being an underdose by the time they grabbed it, and I guess the physician ended up still dosing the patient. As a side note, medical events involving Y-90 microsphere brachytherapy, made up of the majority of medical events reported last year, in 2024. Most of the events were due to underdose or administrative errors, and the NRC issued an information notice, well, not that one, but going back in 2019, they issued an information notice regarding those types of underdoses and administrative errors.

But this past year, since past year, they issued another one, and they actually listed four different events that were in there. One was from Florida, and all four events were included in the report to Congress of abnormal occurrences for last year. The four medical events were deemed to be significant to safety, as each resulted in a dose that exceeded the intended dose to an organ or tissue by 10 gray.

On September 17, 2025, the NRC issued the most recent notice of recent reported medical events involving GI deposition of Y-90 microspheres. I did try to send it out to everybody we had valid email addresses on. I got a whole bunch back, sent back to me, and said, well, either your emails have changed, they left, or when you get the right email addresses, enter it in the computer.

But it is available on our website, FLHealth.gov slash RAD, under the NRC section on the left-hand side, so that's all I got, I was quick, any questions?

[Randy Schenkman] (2:31:00 - 2:31:01)
No questions.

[Kevin Kunder] (2:31:01 - 2:31:02)
All right, good.

[Randy Schenkman] (2:31:03 - 2:31:04)
Okay.

[Clark Eldredge] (2:31:04 - 2:31:09)
You didn't mention, I didn't hear you mention SEVO. Do you want to update on that?

[Kevin Kunder] (2:31:14 - 2:31:22)
Okay, SEVO Med, which is a, well, SEVO Med is not, what's the name of the parent company?

[Clark Eldredge] (2:31:22 - 2:31:22)
NVA.

[Kevin Kunder] (2:31:23 - 2:32:23)
Yeah, NVA, National Veterinary, Associates, something like that. They're a national company. I think I talked about it last meeting before.

They have bought out at least one other facility in Florida, no issues, they did what they're supposed to do with any agreement state, with any NRC state, and like Florida, you get a company that buys out another company, you have to send in that you're gonna change your company, and the state or the NRC will vet that new company, and typically it's a license amendment that'll be done. So they'll put the new name of the company on there, a new license amendment goes out in Florida, we have a statute that requires that the majority change of ownership requires, basically it says the existing license who it was issued for is no longer valid as of the time it happens. So for Florida, we need to work with the date that it's gonna happen, and then we terminate the existing license, and then issue a new license.

Yes?

[James Futch] (2:32:24 - 2:32:31)
Question about the name versus the tax ID. I've had clients where they've changed the name of the business and not the tax ID.

[Kevin Kunder] (2:32:33 - 2:36:08)
We can do it as long as the way the statute reads, majority change of ownership. So if it's a majority change of ownership, it requires a new license. So anyway, so for those that weren't here before, so there was a veterinary office, it was a female vet up in Jacksonville, she had two offices, one on the beach side and she had one in Orange Park, and she decided to sell out to this NVA group, and her practice was SEVO Med, the Southeast Veterinary Oncology, whatever it was, med.

And they sold out, didn't bother telling us, they were 'using the other license', which they can't do, and Chantel left already, but she's got a problem with one of the physicists in that area, and they actually hired this physicist to come in for a short time and kind of made a mess of things. But anyway, we sent inspectors in there and found out that not only did they have a larger list of violations, but they also were, didn't have a license. And we initially thought the way, there's a well-known company here, you register with Division of Corps every year, you have I think about six months from the end of the year to register, and then you still get a little more leeway if you don't make that time, you still get a few more months, but you gotta pay an additional fee for it, and then if they don't get it in, I think by August, by September time frame, they start doing an auto-dissolution of your company.

So that's all we had, we didn't know when this actual transaction took place, so we were using the date that it was automatically dissolved into the date that we found the stuff or they got rid of the RAM. So we'd come up with about $1.6 million fine that we'd come up with for how long they were practicing. Unfortunately, we didn't find out, it was like a year and a half later or earlier that we originally thought, because the original owner had sent her stuff in just before she sold it, so they had covered for the whole year prior until it dissolved the next year, but anyway.

So we went back and forth, they had, again, I don't know how far in the weeds, but they hired a big attorney company in Florida to represent them, we worked real well trying to get things cleaned up, but there was still gonna be some type of fine, so they didn't like that, they hired an even bigger group in Florida with multiple locations, and we came to about, I don't think we even got that far with them, and then our previous top tier of general counsel, I think called the general counsel in the office, she left and started her own company in Tallahassee, and they found her and brought her in, so we had her and our peeps that used to work there and stuff all come in and we met, and we talked about it and stuff, and now I guess we have to have one more meeting now to come up with the final settlement amount, but that's where it's at now. They're not gonna be doing, at least at this time, they're not gonna be asking for a license, they've gotten rid of all the RAM, and they're just not gonna do that in that area, but they still

want to continue in Florida with buying up the veterinary clinics. That's kind of the only update I have, just that we gotta sign off on that and hope we get a little farther.

[Adam Weaver] (2:36:08 - 2:36:11)
What were they doing with iodine in cats?

[Kevin Kunder] (2:36:12 - 2:36:38)
They were doing iodine in cats, they were doing strontium 90 studies. And so, yeah, so they hired a physicist after the fact to come in, and they actually said, okay, well this license is terminated, let's go ahead and move all this stuff to the other license. Again, didn't bother telling us that they were over their authorized limits for RAM.

But yeah, those were the two main things they were doing.

[Randy Schenkman] (2:36:39 - 2:36:50)
Well, if they're buying other vet practices, don't they have to, again, resubmit for all that?

[Kevin Kunder] (2:36:50 - 2:37:30)
Yeah, so the next one, I mean, obviously we're gonna have some kind of something in the settlement with them, but yeah, just like they've done, they did it in the first one 10 years ago, they didn't have any problem with that one. But yeah, they're gonna have to, the existing license is gonna have to be terminated, and they're gonna have to, and all my staff will work real well with the company. Usually we'll get at least maybe a three month advance notice we're doing this, so we'll work with the date that the closure's gonna happen, and we try to make everything happen within that time frame where we terminate the old license, and then issue a new license, and we don't stop at the end, we just keep taking it on, so.

[Clark Eldredge] (2:37:33 - 2:37:46)
There aren't that many vets who have insurance licenses. This is fair to me. Now, what, is it, the instrument they're looking to use on dog, the inflammation, do you remember that?

[Kevin Kunder] (2:37:47 - 2:37:48)
Tin, tin, tin.

[Clark Eldredge] (2:37:48 - 2:37:59)
Tin, okay, yeah, so there's another, I was gonna say just, when you mentioned what they're doing, so there's a new joint treatment coming out that they're doing for dogs right now.

[Kevin Kunder] (2:37:59 - 2:38:00)
Yeah, they want to, I think.

[Clark Eldredge] (2:38:00 - 2:38:14)
They're looking to do it for humans, too. Yeah, they want to keep quiet about that as well, so there's another use that might come in, so maybe if you talk a little bit about dog. Your turn.

Okay, thank you.

[James Futch] (2:38:14 - 2:39:30)
You got one minute, James. This is gonna go fast. Don't worry about it.

Suitability questions that Emily talked about, those, I thought they were in place only in the test, but she said they're actually in production now, so when you go look with students, this is what they ended up with. The beginning of this is the whole idea is to help people realize that they should not be applying for examination, they should be applying for an abortion. So the first question is pretty straightforward.

You currently hold an active credential with the ART or another state to practice as a radiographer. This is only on the general radiographer by exam, right now, because that's supposed to be out. Second question is, have you passed the ART or another state's radiographer exam?

Okay. By this point, you should be good to go. If you say yes to any of these, you will not get passed into this, you cannot get into this general radiographer by exam.

And the last one, this is a little bit of a tricky one. Are you currently scheduled for or have you applied for the ART or another state's radiographer exam? We used to try and encourage them, hey, yeah, let us know, and now it's like, no, please finish that and then come back for endorsement, because by the time, as you know, we would get through.

[Kathy Drotar] (2:39:30 - 2:39:34)
Yeah, that goes to that temporary, that they say, get away with it.

[James Futch] (2:39:34 - 2:40:12)
I didn't, yeah, and actually, that's a question for the council. The department's opinion, at least as far as I'm concerned, is that we really should not be issuing temporary licenses anymore. For people, in the past, we've traditionally done that from the days of paper and pencil exams, when they were offered twice a year, every six months.

We would give them a temporary when they graduated. We're still doing that, we're taking the exam very shortly afterward, beginning with preliminary results. So I don't know, I won't ask for an actual vote on this, but is it the sense of the council that we should or should not be still issuing temporary licenses?

[Kathy Drotar] (2:40:13 - 2:40:28)
Just to add to that, children, is once they've passed the registry, then they have to, again, reapply for the license. It's not a pass-through like it used to be years ago. They have to actually reapply and do everything.

[James Futch] (2:40:28 - 2:40:43)
I don't hear anybody normally saying so does that mean, does that mean they need temporary and detained, or? That complicates. That was always the time period when they graduated until they could get licensed by.

[Kathy Drotar] (2:40:43 - 2:41:18)
But now they can, because it's all computerized testing, once they get their appointment, and they can take it the day after they graduate from the program. So our students graduate on Sunday, we had students that took it on Monday. And some of them choose to take it later, but usually within a month of graduation, which is the length of time that it takes for the temporary.

And then, if that, once they pass it, then there's another extension for having to apply for that permanent license.

[James Futch] (2:41:19 - 2:43:37)

I wish it was permanent, that's what I'm saying. So let's, let's see, it's problematic. If anybody is involved in the school, if anybody is, has any influence with schools, let them know, they, you know, if you're straight, they already get licensed.

As a, give us the, the prevention that you just got electronically. A couple other things, radiologist assistant, Roosevelt would be happy to hear this. We have talked in many council meetings about updating the practice standings for radiologist assistants.

Between the main meeting and now, we've obtained the permission from the ASRT to use the practice standards, again, copyright, reprint permission. Draft language has left us, and it is now with lawyers. So, basically, we had to describe the statutory prohibitions that you guys operate underneath, which is that, you know, you can't drink or eat, you can't do medical exams, you can't prescribe medications and therapies.

In Florida, the statute specifically says you can't perform radiation therapy duties, and you also can't perform any real medicine duties. There's a modicum amount of specificity in that practice standard that talked a lot about use of radiopharmaceuticals or the radioactive materials. So, we went through and found all the places, how they were described, grab all the words, radiopharmaceutical, radioactive materials, and listed them in the rule to say, this is for you.

Otherwise, the rest of it's fine. So, that is with lawyers, they got all the pieces. Hopefully, the next thing we will see is something published on the Florida Ministry of Registry with the release of development notes of how fast, as slow as molasses.

But, it is out of the Bureau of Radiation Control's hands. I just want you to know that. Awesome, guys.

Thank you. Good night.

[Kathy Drotar] (2:43:37 - 2:43:40)
And, moving forward to the other disciplines?

[James Futch] (2:43:44 - 2:46:19)
That's a future council meeting. Send me suggestions for agendas. I always use suggestions.

For talks and agendas, somewhere out of the blue, probably because we've been talking about rulemaking, sometimes you'll do things a certain way for a decade or two, and then new lawyers will come along, new management will come along someplace else, and you'll go, how are you doing that? You really need the right rule for that. So, I'm now writing a rule for remedial education for people who fail a state exam in any modality, five times, and apply again for a sixth attempt.

The statute basically gives us the ability to write remedial education for that. I'll tell you what we do, and we're trying to codify that in some language that's amorphous enough to cover everything. We look at what your scores were.

This isn't rocket science. We look at what your scores are overall, and we look at what your section score is on the test. So, for example, if you're a radiographer, you probably ought to get a 7.5 in each subsection, and therefore, a 75 overall scale score in the pass with us and the pass with ARRT. If we see that you did not do that, let's say you failed by, I don't know, a 5.0, and you got a 50 scale score, I'm probably gonna tell you, you can take this test as many times as you want to, and you're probably not gonna pass it. But

regardless of that fact, what we do is we look specifically and we have a conversation with them, and we say, this is how you read your test scores. This is where you're weakest.

We recommend you go find additional education. Really, any mechanism you want, we can suggest something that you can document to us. Continuing education, all of these reviews that are out there for the exam that have these subject areas.

So that's what we do. So what you just heard me say is gonna be written by the time we get to the next council meeting. And I just want to let you know that.

And then I have all the usual discipline stats and statistics. This time around, there was a lot of practicing outside the scope and unlicensed activity and things of that nature to go along with sexual battery and operating under the influence while you're doing something in the facility. All in all, what is the team's scale?

71 open cases, a miniscule of 31,000 active technologists to do it, but it seems to always be about 50 to 70 cases. I'm in.

[Bill Atherton] (2:46:20 - 2:46:26)
It's good to know that it's not zero. Oh, it's never zero. Like the badges, that's what it is.

[Clark Eldredge & James Futch] (2:46:28 - 2:46:46)
If it's ever zero, we weren't looking. I'm in. I understand what you're doing.

I think it's the same. It's either you're practicing in a way that's not correct, you're doing something wrong in a facility, and it's often the case that you're operating under the influence of that.

[Unknown Speaker] (2:46:46 - 2:46:47)
What do you call it?

[James Futch] (2:46:48 - 2:47:03)
Child abuse and sexual battery and all the rest of it. These types of crimes, what causes people to do that and all that, but it's those things. And then I have the amount of practicing, without a license at all.

[Clark Eldredge] (2:47:04 - 2:48:33)
I will, there's one of the things. There's a young person around who are about 60% licensed. One other thing I hope I can talk about in two minutes.

SB108, the legislature passed a law requiring additional reports of any group licensing, any state agency that does any licensing for their licensing, basically trying to measure things like how long it takes them to get a license out, how often there's failures in licensing. People, you know, either, excuse me, how often there are incomplete licenses or applications that you have to go back and get additional information, how many times applications are abandoned, some of those. So we, like other folks, have had to adopt practices within both the x-ray and the materials programs to measure those.

Those of you who have a license from the state, should be finding out that you will be able to obtain, at some point, reports like that from your licensing agency. Currently, they're all being reported to JAPSI, which is the joint, any of the world body that people will monitor all the world development. How they're gonna take those reports and publish them, we don't know, but that's where they'll end up.

And so sometime a year from Christmas, that information and data should be available through JAPSI, somehow. We don't know, but it'll be measured from October to October each year.

[James Futch] (2:48:36 - 2:48:37)
Do you want no more, Hank?

[Clark Eldredge] (2:48:39 - 2:48:44)
All right, that is, if you don't want to have no more, just wait, I don't know what it is.

[Kevin Kunder] (2:48:45 - 2:48:49)
Technically, it's fiscal year to fiscal year, but this year, it's from October to the end of the fiscal year.

[Clark Eldredge] (2:48:49 - 2:49:02)
Oh, that's right, it will be fiscal to fiscal. Well, they start, it'll be nine months this year. That's right, sorry.

The reports are due in October, after the end, so three months to put the reports together. And then, however much, it's submitted to JAPSI.

[Adam Weaver] (2:49:04 - 2:49:08)
Maybe more, yes.

[Clark Eldredge] (2:49:09 - 2:49:11)
Oh, yes, it was scary at first.

[Randy Schenkman] (2:49:14 - 2:49:29)
So, the next one is our next meeting. May I prefer early in May, if that's good for everybody else.

[James Futch] (2:49:31 - 2:49:32)
Whose society?

[Clark Eldredge] (2:49:33 - 2:49:34)
CRCB meeting.

[James Futch] (2:49:34 - 2:49:36)
CRCB meeting is what this year?

[Clark Eldredge] (2:49:36 - 2:49:38)
I'm gonna see if they've got it on the website right now.

[Kathy Drotar] (2:49:38 - 2:49:39)
I'm sending it over to you.

[Randy Schenkman] (2:49:41 - 2:49:42)
Oh, we can do it in late April.

[Mark Seddon] (2:49:45 - 2:49:50)
Tuesday is usually pretty clear for most meetings, right? For most meetings, their weekend.

[Chantel Corbett & Brenda Andrews] (2:49:52 - 2:49:54)
Tuesday, Tuesday, Tuesday, Wednesday, Wednesday.

[Clark Eldredge] (2:50:04 - 2:50:07)
I'm gonna drop off the other guy again. Come on, stop that, stop cutting me off.

[Kathy Drotar] (2:50:07 - 2:50:09)
Jerry, you're looking at the fifth, or the twelfth?

[James Futch] (2:50:12 - 2:50:18)
Yeah. Wednesday, I'll see if I can do that.

[Unknown Speaker] (2:50:19 - 2:50:21)
What I did, I did.

[James Futch] (2:50:21 - 2:50:25)
I'll ask you. You bring the fire agents? We're on again.

[Adam Weaver] (2:50:25 - 2:50:26)
That's not yours.

[Randy Schenkman] (2:50:26 - 2:50:27)
Yeah.

[Adam Weaver] (2:50:27 - 2:50:29)
I'm gonna just think of the last year's.

[Randy Schenkman] (2:50:30 - 2:50:36)
Or we could do it on the 6th of Wednesday. We're going to want to do that on the 6th of March.

[Chantel Corbett] (2:50:36 - 2:50:42)
Thursday, Tuesday, because I think that's the week of FNMT, which starts on Thursday. So the vendors are going to invite people on Wednesday.

[James Futch] (2:50:43 - 2:50:46)
So the 5th? No, I'm just saying the week of the 12th.

[Chantel Corbett] (2:50:46 - 2:50:48)
No, no, no, I'm saying Tuesday and the 5th of Wednesday.

[James Futch] (2:50:49 - 2:50:50)
Tuesday.

[Mark Seddon] (2:50:50 - 2:50:51)
Tuesday I'd have preferred. Yeah.

[James Futch] (2:50:53 - 2:50:55)
So the 5th or the 12th, anyone?

[Chantel Corbett] (2:50:55 - 2:50:57)
Cinco De Mayo or not Cinco De Mayo

[Randy Schenkman] (2:50:57 - 2:51:01)
I'd rather the 5th because I may not be here on the 12th.

[Kathy Drotar] (2:51:01 - 2:51:02)
All right. Okay.

[Unknown Speaker] (2:51:03 - 2:51:04)
I'd rather the 5th.

[Randy Schenkman] (2:51:05 - 2:51:12)
May 5, we'll celebrate, that's all. May 5.

[Clark Eldredge] (2:51:13 - 2:51:20)
I'm about to go have a deal at World of Beer. Yeah? Yeah, World of Beer will have a deal that day.

[Unknown Speaker] (2:51:20 - 2:51:21)
There you go.

[Various Speakers Talking Over One Another] (2:51:21 - 2:51:49)

[Randy Schenkman] (2:51:50 - 2:51:51)
Any other business?

[Various Speakers Talking Over One Another] (2:51:51 - 2:51:57)

[James Futch] (2:51:57 - 2:52:04)
Yeah. Any other suggestions for speakers that you guys want? Or do you have commentary?

Oh, sorry. Commentary. NCRP commentary.

[Randy Schenkman] (2:52:08 - 2:52:11)
What was that?

[Tom Morgan] (2:52:13 - 2:52:17)
NCRP Commentary 33. Recommendations for Training for Fluoroscopy Use.

[Adam Weaver] (2:52:34 - 2:52:39)
We good? OK. OK.

We're good. OK. We're adjourned.

[Kathy Drotar] (2:52:39 - 2:52:44)
Make a motion. I motion to adjourn. I make a motion to adjourn.

Second.

[Randy Schenkman & Others] (2:52:44 - 2:52:55)
Second. All in favor? Aye.

Any opposed? Aye. Aye.

[Unknown Speaker] (2:52:55 - 2:52:55)
Aye.

[Randy Schenkman] (2:52:55 - 2:52:55)
Aye.