with some devices. It could be possible to do an intervention and -- and radiation at the same time. I think that's a possibility, certainly. Not with every device.

MR. BROWN: Q. Well, am I correct that, when you use the word "treatment," that refers at least to the use of an interventional device to reduce stenosis in an artery?

A. Generally, that's what I mean, yes.

Q. And when you use the term "post-treatment," you're referring to the use of a device to prevent or minimize what's called restenosis?

A. That's correct, yes.

Q. So the purpose of the treatment is to, in effect, open the blockage in the artery, and the purpose of the post-treatment is to try to minimize any subsequent -- a reduction in the diameter of the artery?

A. That's correct.

Q. Now, in your patent, what role does the amount of radiation released in the treatment area play in achieving the goal of post-treatment?

MR. TEIXEIRA: Rob, I would caution you, before you answer, to read the patent.

THE WITNESS: Well, do we -- I don't -- we do talk about control at some point in here, but I --

MR. TEIXEIRA: Why don't you take a look at the patent again.

THE WITNESS: Well, I have to...

MR. TEIXEIRA: Unless --

MR. BROWN: Q. You're certainly welcome to refer to the patent, Mr. Hess, but I'm -- I'm asking the question really based on your experience with using devices that include radioactive elements or material.

A. Okay. In that context, I think -- I haven't found it back. That's a term that translates from another language. In this setting, one would be concerned about the amount of radiation because you do not want to provide large amounts of radiation that will kill cells, because, unlike soft tissue oncology procedures, you're dealing with a -- a pressure vessel,

a very critical pressure vessel, a tubular organ that has pressure within it --

Q. You're referring to the artery?

A. The artery, and it's pulsating, so it's subject to fatigue, and if you kill enough cells, the artery will rupture, so there's an appreciation that it's somewhat unlike other uses of radiation in nuclear medicine.

Q. So are you saying that you have to be concerned about not using too much radiation?

A. Or too little.

Q. All right. What happens if you use too little radiation?

A. You get restenosis, presumably, and, in fact, you do.

Q. So then what -- what is done to -- to get the appropriate amount of radiation to the artery?

A. Well, there are numerous ways of doing that, and it -- exposure time is one way, and limiting exposure time is -- can be done in many ways, and it will depend on the particular isotope that you're working with and the energy delivered by that particular isotope.

Q. So are there any structures that -- identified in your patent that play a role in ensuring that you get the right amount of radiation to the artery?

A. Yes, some of them contemplate shielding as a means of doing that.

Q. Can you identify for me what you're referring to?

A. I'm going to go by the figures, rather than the text. Figure 5 certainly would provide a means of shielding, to some degree. It depends on the materials you choose as well. Figure 6 as well.

Q. Let's back up a second.

In Figure 5, what is the shielding, or how is it identified?

A. Well, the shield -- there's a shielding effect by this wire wound member when you withdraw the

radioactive source inside of it.
Q. You're referring to number 50?
A. 50, that's correct.
Q. All right. And then what was the next figure you referred to?
A. I think Figure 6, if I remember the text, and I can go read it, if you like, but I think that's a window --
MR. TEIXEIRA: Rob, rather than guess, just read the text.
THE WITNESS: All right. I've got to look at Figure 6.
I think that's a window that closes.
There's a -- this window can be opened and closed, presumably, by a cover of some sort, and, depending on the materials chosen, would offer a degree of shielding.
MR. BROWN: Q. And by "this window," you're referring to what in Figure 6?
A. Well, it's -- I think it's 66. I'll take a look. Window 66, yes.

Q. All right. Any other structures in your patent, in the figures, that are used to control the amount of radiation to which the artery is exposed?
MR. TEIXEIRA: Rob, I would ask you to read the patent again.
THE WITNESS: Uh-huh.
MR. TEIXEIRA: And specifically, if I can speed this up, you might want to look at column 3, from line 15.
THE WITNESS: Column 3, line 15, Figure 1. I was just looking at that.
Yes, I think Figure 1 would, again, depending on the materials you choose, would provide a measure of shielding.
MR. BROWN: Q. And how would that happen?
A. The -- the dose means is 22, I think, a wound housing 22 within the lesion site...sheath 24.
Yeah, so the radioactive dose is contained here --
Q. I'm sorry. The what is contained?
MR. TEIXEIRA: You need to refer to the numbers, Rob, for the court reporter.

THE WITNESS: The radioactive source -- let me find it again.

Housing 22 contains a dose means 30. Okay.

Hess claim construction
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So this housing contains a dose means 30, and is retractable within the sheath, which is, I believe, 10. No, that's the whole thing.

MR. BROWN: Q. Is the sheath 24?

A. Let's find out.

Sheath 24, yeah.

Q. All right.

A. So it's retractable within that sheath, and, again, depending on the choice of materials, a more or less degree of shielding could be provided.

Q. So is the radioactive material contained within some structure which is a wire wound housing 22, and then that is retractable within another --

A. Wire wound housing --

Q. 24.

A. A sheath, and I don't know -- wire wound retractable sheath 24. Yeah, so that's a wire wound retractable sheath 24, so it's -- yeah, it's contained -- the source is contained within a housing, and the housing is within the --

Q. Sheath?

A. Right.

Q. So you, in effect, have two layers of insulation in that embodiment?

A. No, not really. Not really, because there is

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a window -- window in the sheath that holds the -- I thought there was a window.

Q. Is that window cut-out 32? Is that what you're referring to?

A. What line is that?

Q. Line 3, about -- I'm sorry. Column 3, line 38, roughly.

A. I didn't get that far yet.

Window cut-out 32. Window cut-out 32, so there's -- the source is within that sheath, but -- but can be exposed by opening the window of 32, or the

artery can be exposed by opening the window 32.
Q. All right. So in -- in Figure 1, how does one control for the amount of radiation that's released to the artery?
A. Can do it in several ways, or it has several components, let's say. With this window closed, the source is shielded to some degree, but -- depending on the isotope, and the particles coming off that isotope, it may be more or less shielded. If it's withdrawn inside the sheath, it is more shielded, and if it's removed from the artery, there is no more radiation, so there are sort of multiple possibilities of limiting the radiation with a device like this.
Q. And then, looking at the -- the version of the

device in Figure 5, how is the amount of radiation released to the artery controlled?
A. Again, there's a degree of shielding when you retract it within that sheath, and the time of exposure until you remove the entire device.
Q. And then with respect to Figure 6, how does one control for the amount of radiation released to the artery?
A. There's a -- a closable window that would provide a degree of shielding, and -- and time of exposure, removal of the device.
Q. If we look at claim 1 of the '168 patent, can you describe for me the sequence of steps that are used as part of the claimed method?
A. You want me to read it to you, or --
Q. No. Let's just walk through it.
Am I correct that the first step is reducing the annular stenosed area within an artery?
A. That's what's contemplated here, yes.
MR. TEIXEIRA: And again, you're asking this from his point of view as a lay person?
MR. BROWN: Right, and the identified inventor.
MR. TEIXEIRA: That's fine.
MR. BROWN: Q. So is that first step what

means.
So positioning means can be any means of getting a radioactive source to the lesion.
MR. BROWN: Q. Well, that's just -- that's just a recitation of the language out of the claim, isn't it?
MR. TEIXEIRA: Object to the form. He's a lay person.
MR. BROWN: Well, he can read as well as any of us.
MR. TEIXEIRA: That's fine, but he doesn't have to agree to your characterization.
THE WITNESS: I just read it.
MR. BROWN: Q. Am I correct that what you read is just the same language that appears in the claim?
A. And? I don't know what that means.
Q. Well, what I want to know is: Where do you

describe any structures that accomplish this -- the purpose of the post-treatment and that are not either a catheter over a guidewire or a device that surrounds a motion wire?
A. And my answer is at line 39, column 2, the summary of the invention.
Q. Anything else?
A. No.
Q. And am I correct that --
MR. TEIXEIRA: Rob, why don't you read the patent before you answer that.
MR. BROWN: Q. Am I correct --
A. You mean does it appear elsewhere? I believe it probably does. I think this kind of language -- I haven't memorized this. I never will memorize this, but I think that kind of language exists in the -- in the description as well. If you like, I'll go and try and find it.
Q. Well, I'm interested in what other structure you can identify for me in the patent that accomplishes the purpose of the invention.
MR. TEIXEIRA: Rob, I would ask you to read the whole patent, then.
THE WITNESS: So if we refer to column 4, it's probably starting at line 7, okay, these materials may

be incorporated into and delivered in a solid, liquid, or gaseous form, and the delivery of such forms is considered within the scope of the invention, so that's a description of various other forms -- various forms in which the isotope can be found, and that it can be delivered in those forms.

MR. BROWN: Q. Does it tell you how --

A. And we don't have a drawing -- and we don't have a drawing of a gaseous isotope or a liquid isotope, but it is claimed within the scope of the invention, and the delivery of such forms or the transport of such forms of the isotope would require a positioning means which is operatively connected to them which is appropriate for those forms of the isotope.

Q. Well, my question is: What is there in column 4, line 10 through 12, that tells you what structure is used to accomplish the purpose of the invention?

A. This -- the structure is described as the isotope in any one of those physical forms, and -- and any one of those particular forms of the isotope operatively connected to a positioning means.

Q. So what is the structure disclosed at column 4, line 10?

A. The structure disclosed here is the form in which the isotope may be delivered or the physical form

in which the isotope may be delivered to the lesion site.

Q. That being solid, liquid, or gas?

A. Correct.

Q. But does this passage disclose the structure by which those radioactive materials may be delivered?

MR. TEIXEIRA: Objection. Asked and answered.

THE WITNESS: Not in this paragraph, but that, in combination with the -- the source being operatively connected to a positioning means describes -- I'm not sure of the question I'm answering anymore -- describes other devices, basically.

MR. TEIXEIRA: Counsel, whenever it's time for a bathroom break...

MR. BROWN: Q. So, again, you're referring back to the language in the claims for the --
A. Well, I'm not done yet.
Q. All right.
A. There may be more in here, but I'm just saying -- all I'm saying is that describes other forms that aren't disclosed in the figures, or could be incorporated in the figures.
Q. Well, can you identify any other structure in the patent that accomplishes the purpose of the invention and is not either a catheter over a guidewire

or a device surrounding a motion wire?
A. I think I did that.
Q. Have you completed your review of the patent?
A. No, I think I've done that by saying it could be in these forms, and it has to be operatively connected in any of those forms to a positioning means, any positioning means, any means of operatively connecting it.
Q. I'm looking for language in the patent that discloses a structure other than a catheter over a guidewire or a device surrounding a motion wire that accomplishes the purpose of the invention. You've identified for me a passage at column 4, lines 10 through 12, and a passage at column 2, roughly lines 37 to 41.
Are there any other passages in the patent --
A. I have to read the rest of it to -- to see, but in my mind, that -- that describes a broad array of methods, mechanisms, of getting an isotope to a lesion site beyond a guidewire or -- or a -- whatever the other term was.
Q. All right. And my question, again, is: In addition to those two passages, is there any other passage in the patent --
A. I have to -- I have to finish reading the

patent.
Q. -- that discloses a structure that accomplishes the purpose of your invention and is not

either a catheter over a guidewire or a device surrounding a motion wire?

And we can take a break now, if you want to.

MR. TEIXEIRA: Why don't you finish. We'll come back, and you can finish reading the patent and answer his question.

THE VIDEOGRAPHER: This marks the end of tape number 1 in the deposition of Robert Hess.

Going off the record. The time is 10:52.

(Whereupon, a recess was taken.)

THE VIDEOGRAPHER: Back on the record.

Here marks the beginning of tape number 2 in the deposition of Robert Hess. The time is 11:09.

MR. BROWN: Q. Mr. Hess, let me restate the question that I asked before the break.

Can you direct me to any language in the '168 patent that discloses a structure other than a catheter over a guidewire or a device surrounding a motion wire that accomplishes the purpose of the invention?

You've identified already a passage at column 4, lines 10 through 12, and a passage at column 2, roughly lines 37 to 41. Are you able to identify any

additional language in the patent that discloses such a structure?

A. I will have to continue going through the --

Q. Please do.

A. If we look at column 4, starting at line 66, through column 5, line 7, contemplates different structures as well.

Q. Does it disclose any structure other than a catheter over a guidewire or a device surrounding a motion wire?

A. Well, it says, "Having indicated above preferred embodiments of the present invention, it will occur to those skilled in the art that modifications and alternatives can be practiced within the spirit of the invention. It is accordingly intended to define the scope of the invention only as indicated in the following claims," and referring back to the previous two references, that means that it is any means of delivering a radioactive source, which is either a liquid, a solid, or a gas, operatively connected to a positioning means.

claim contemplates advancing an isotope to a -- to the site of a lesion and extracting it from the site of the lesion and the artery using a positioning means which is operatively connected to the dose means, and whatever I can imagine -- whatever way I can imagine doing that is within the scope of this claim.

Q. So in your view, the positioning means for advancing the radioactive material can be different from the positioning means for removing the radioactive material?

A. I would like to believe that this is broad enough to allow that if I wanted to do it.

Q. What does the -- let me back up.

Do you know how a person working in the field of radiation therapy would construe the term "radioactive dose"?

MR. TEIXEIRA: Objection. Foundation.

THE WITNESS: I can't say that -- there are many ways to measure -- there are several ways to measure radioactive dose. I don't know what the standard is in -- in -- you mean nuclear medicine, oncology, for example? I'm not sure what you mean by that.

MR. BROWN: Q. My question is simply how a person working in the field of radiation therapy would construe the term "radioactive dose."

MR. TEIXEIRA: I'm going to object. Foundation.

MR. BROWN: Q. Do you know? You can tell me. If you don't know, tell me you don't know.

A. No, I don't know. In fact, I mean, you can talk about the emitted dose or the absorbed dose, and I'm not quite sure at this point in time what the convention is.

Q. Well, what does the term "radioactive dose" mean to you?

A. It means -- it means a quantity of energy that

is emitted by a radioactive source and -- and/or the effect that that has on some material, the absorbed

dose. It can -- it can mean a number -- it can mean a number -- or there are a number of different ways of interpreting or measuring dose, and, in general, you have to choose a -- a parameter that you want to measure and -- and -- and then build your data around that.

Q. Well, does -- does it refer to some quantity of radiation?

MR. TEIXEIRA: Objection. Asked and answered.

THE WITNESS: If it's absorbed dose, it will depend on the -- the source, the particle, the energy of that particle, and the material that's being -- that's -- that's absorbing the dose. It depends on all those things, and the attenuation within -- you have blood in the artery. There will be an attenuation, or you have -- or it's going through the wall of a balloon or something, where there's an attenuation factor, which varies with the energy of the particle and the particle type, and it's not a particularly simple thing.

MR. BROWN: Q. All right. So can you identify for me the factors that, in your view, impact radiation dose?

A. I think I just did. It's the particle, the energy of the particle, and attenuation of any other

materials in the way, and the reactiveness of the material that is being -- the radiation is being applied to.

Q. Does it also depend on the length of exposure?

A. As well as the time, sure.

There may be other things that I've missed as well.

Q. Now, in what way does a radioactive dose depend on the length of time the tissue is exposed to the radiation?

A. More time, more dose.

Q. How does the radioactive dose depend on the level of radioactivity of the material?

A. More particles, more dose, more energy, basically.

Q. So the higher the radioactivity of the material, the higher the dose for a given period of time?

A. Not necessarily. It depends also on what's being emitted.

Q. Well, all other things being equal.
A. Yes. I mean, if you're talking about where it is in its series of decay, yes, a given isotope, yes, that's correct.
Q. And does the dose also depend on whether the

radioactive material is a solid, liquid, or gas?
A. It may.
Q. Does it -- does the dose depend on whether the radiation emitted is alpha, beta, or gamma?
A. Clearly, it does, and in conjunction with other factors.
Q. What is the difference between alpha, beta, and gamma radiation?
A. Alpha is a very large particle. It's -- is easily absorbed, easily shielded. It would probably not be a good choice in this setting because generally you have enough fluid around that you probably wouldn't get any dose through the artery wall. Beta is essentially an electron, has medium penetration, depending on the energy of the particle, has significant mass, so that it gives up energy pretty readily. Gammas are extremely penetrating, and tend to be used in areas where either the -- the material to be irradiated is quite thick or you can expect a lot of attenuation due to interstitial materials.
Q. Now, according to the '168 patent, does it matter whether you use alpha, beta, or gamma radiation?
MR. TEIXEIRA: Object to the form.
THE WITNESS: Fundamentally, it shouldn't matter, but one or the other form will generally be

found to be more desirable, given the structure and what you're trying to do and half-life of the isotope, and at the end of the day, you want to deliver a certain amount of energy to the stenosed region to -- to prevent proliferation of the cells, and getting the energy there depends on a -- a large number of factors.
MR. BROWN: Q. Well, then, how, according to the patent, does one control for the amount of radiation that's released to the area of reduced stenosis?

MR. TEIXEIRA: Objection. Asked and answered.
THE WITNESS: The patent doesn't tell you how to do that. It tells you you should do that, I believe.
MR. BROWN: Q. Am I correct that it is important to control the amount of radiation released to the area of reduced stenosis?
A. In -- in my belief, yes.
Q. And that's in order to ensure that you get the desired response in terms of minimizing restenosis?
A. Without causing damage. The -- the issue is to get enough -- sufficient radiation to the site to control the smooth muscle cells, but without causing significant damage to the artery.
Q. Now, does the term "radiation" or "radioactive dose" imply anything about which radioactive material is used?

A. No. It implies that a radioactive source is used.
Q. Does the term "radioactive dose" imply anything about the form of the material, that is, whether it's solid, liquid, or gas?
A. Not necessarily, no.
Q. Does the term "radioactive dose" imply anything about the shape of the material?
A. Not necessarily, no.
Q. Do you see the term, quote, radioactive dose means, end quote, in claim 1 of the '168 patent?
A. In which line?
Q. Claim 1.
A. Claim 1, "advancing a radioactive dose means," yes.
Q. All right. What does the term, quote, radioactive dose means, end quote, mean in the context of claim 1?
A. It means -- it means something capable of emitting radioactivity.
Q. What's the function of the radioactive material that's part of the radioactive dose means?
A. To -- to emit radiation.
Q. What's the purpose of emitting the radiation?
A. To deliver a certain amount of energy to the

stenosed region.
Q. And what is the purpose of delivering a certain amount of energy to the stenosed region?
MR. TEIXEIRA: Objection. Asked and answered.
THE WITNESS: To control the proliferation of smooth muscle cells.
MR. BROWN: Q. What are the possible materials disclosed in the patent that can be used to perform the function of releasing radiation?
MR. TEIXEIRA: Rob, I'll ask you again to make sure that you read the patent.
THE WITNESS: I know it's in here somewhere.
MR. BROWN: Q. I can direct you to column 4, lines 7 through 9.
A. Column 4, 7 through 9.
MR. TEIXEIRA: I think you would also want to look at the lines preceding that.
THE WITNESS: And the question is: What are the --
MR. BROWN: Q. The question is: What are the possible materials disclosed in the patent that can be used to perform the function of releasing radiation?
A. Well, if you take the isotopes that are listed there together with radioactive materials, including but not limited to, it's anything that's radioactive.

Q. All right. Now, you refer specifically to Radon 222; am I correct?
A. Yes.
Q. What form of radiation is that, or radioactive material?
A. I don't know. I don't remember what form that's found in.
Q. Do you remember whether it emits alpha, beta, or gamma radiation?
A. No, at this point.
Q. What about Gold 198? Is it alpha, beta, or gamma?
A. The same answer. I don't -- I don't recall at this time.
Q. What about Strontium 90? Do you remember whether it's alpha, beta, or gamma?

A. I don't recall at this time, no.
Q. What about Radium 192? Do you remember whether it's alpha, beta, or gamma?
A. I don't recall.
Q. What about Iodine 125? Do you remember whether it's alpha, beta, or gamma?
A. No, I don't recall.
Q. Do you remember which of these radioactive materials are solid, which are liquid, and which are

gas?
A. No, I don't recall at this time.
Q. What are the possible forms of the radioactive material disclosed in the patent?
A. Do you mean solid, liquid, or gas, or -- yes. I'm sorry. Did you --
Q. Let me try to clarify.
Am I correct that the forms of radioactive material disclosed in the patent are solid, liquid, and gas?
A. They may be. I don't -- I don't know what natural forms those are found in, but the contemplation is that they may be incorporated into or delivered in a solid, liquid, or gas, not that they're found in those natural forms necessarily.
Q. Now, looking at the figures in the patent, can you tell me the form of the radioactive element disclosed in each of the figures?
A. Let me see about Figure 3.
So what is the question, now? What are we answering here? What am I answering?
MR. TEIXEIRA: Do you need the question read back?
THE WITNESS: Yeah.
MR. BROWN: Q. I'll state the question again.

Can you tell me the form of the radioactive element disclosed in each of the figures of the '168 patent?
A. Well, I suppose there are certainly, in the case of the stent, there are multiple possibilities. In

Q. So does the phrase, quote, radioactive dose means, end quote, say anything about the possible materials that could be used?
A. Yes. It says it has to be a radioactive material.
Q. Other than that, does it tell you anything

about the type of radioactive material?
A. No, it's not defined.
Q. Does the phrase, quote, radioactive dose means, end quote, tell you anything about the possible forms of the radioactive material?
A. The patent tells you about the potential forms. That phrase doesn't.
Q. Does the phrase, quote, radioactive dose means, end quote, tell you anything about the possible shapes of the radioactive material?
A. I don't think so.
Again, I'm just thinking, is there an isotope that -- that has to be in a particular shape to function? I don't think that's the case, quite honestly. It may be. I'm not aware of it.
Q. So is it accurate to say that the phrase, radioactive dose means, end quote, doesn't tell you anything about the kind of radioactive material, the form of the radioactive material, or the shape of the radioactive material?
MR. TEIXEIRA: Objection. Form.
THE WITNESS: It doesn't define it, but it tells you that it's a radioactive material, and it's my belief that you can, within the scope of this patent, it can be in any of the forms of solid, liquid, or gas, and

it can be any radioactive material which has sufficient properties to accomplish the -- the control of the smooth muscle cells, and it can be in any form which is appropriate, and that's called design engineering, I guess. You have to consider all those things.
MR. BROWN: Q. But am I correct that the phrase itself, quote, radioactive dose means, end quote, tells you none of those things?

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AFTERNOON SESSION 1:17 P.M.

THE VIDEOGRAPHER: This marks the beginning of tape number 3 in the deposition of Robert Hess. The time is 1:17.

EXAMINATION BY MR. BROWN (RESUMED):

MR. BROWN: Q. Mr. Hess, I want to talk with you about the term or phrase, quote, positioning means, end quote, as that phrase is used in the '168 patent. Let's look at the use of that phrase in the '168 patent. Could you look first at column 2, lines 38 to 41.

Do you see at that location the use of the phrase, "positioning means"?

A. Yes, I do.

Q. Does the use of that phrase at column 2, lines 38 to 41, shed any light on how that phrase should be construed? Does it tell you there what "positioning means" is intended to mean?

A. It's not defined, no.

Q. Would you please look at column 3, lines 33 through 35, and tell me whether you see a reference to "positioning means" at that cite.

A. Yes, I do.

Q. Am I correct that the patent reads, at that cite, quote, A radioactive dose means 30 is movable by advancing or retracting catheter shaft 26 which may be referred to as a positioning means, end quote?

A. I see that, yes.

Q. So how is "positioning means" defined in that sentence?

A. "Positioning means" is defined -- a positioning means is defined as a catheter shaft in that -- in that sentence, which also implies that there are other positioning means, because that is a positioning means.

Q. All right. Would you please look at column 4,

lines 17 through 20, and tell me whether you see a reference to "positioning means" at that cite.

A. A device including "a positioning means 52

which is a motion wire providing slidable motion of the radioactive dose means."

Q. So you just read from the patent?

A. That's what I read, yes, from the patent.

Q. All right. So am I correct that, at column 4, lines 17 through 20, the positioning means is defined as a motion wire?

A. That's correct.

Q. Is the term or phrase "positioning means" used in the patent to describe anything other than a catheter shaft or a motion wire? And now I'm referring to the written description portion of the patent.

A. I don't know.

Q. Well, would you please take a look. I've tried to identify for you the places where I found the term, but for you to be satisfied, feel free to take a look.

Have you had an opportunity to read through the patent, Mr. Hess?

A. Yes, I have.

Q. All right. Let me rephrase my question or repeat my question.

A. Yes.

Q. Is the phrase "positioning means" used in the written description portion of the patent to describe anything other than a catheter shaft or a motion wire?

MR. TEIXEIRA: Objection to form.

THE WITNESS: Well, I'd refer you in -- I would refer you to column 5, lines 3 through 7, "Having indicated above preferred embodiments of the present invention, it will occur to those skilled in the art that modification and alternatives can be practiced within the spirit of the invention. It is accordingly intended to define the scope of the invention only as indicated in the following claims."

MR. BROWN: Q. All right. My question again, is: Is the phrase, "positioning means," is that phrase used in the written description portion of the patent to describe anything other than a catheter shaft or a motion wire?

A. And my answer is: When you take those two references and couple that with the last paragraph before the claims, that is the sum total of the

definition of "positioning means."
Q. All right. And would you agree that that last paragraph before the claims says nothing about -- or does not use the term "positioning means"?

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A. The words are not there, "positioning means."
Q. Now, do you have any reason to think that a person of ordinary skill in the art would think of a fluid when reading the term "positioning means"?
A. I believe that's possible, yes.
Q. Why?
A. Because there are numerous -- numerous examples where fluids or gases have been used to position things.
Q. Are there any in the patent?
A. Well, what I meant by that is there are numerous examples in other fields where that's been done.
Q. Are there any in the patent?
A. Refer you again to column 5, 3 through 7.
Q. And again, that paragraph doesn't use the term "positioning means"; correct?
A. The words are not there.
Q. Is there any other language in the written description portion of the patent that you'd point to to support a construction of the phrase "positioning means" to include a -- a fluid?
MR. TEIXEIRA: I would ask that you read the patent again.
THE WITNESS: Sorry?

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MR. TEIXEIRA: I'd caution you to read the patent before answering the question.
THE WITNESS: The question is? I'm sorry. Again.
MR. TEIXEIRA: Can you read back the question, please, Leigh?
MR. BROWN: I'll restate it.
Q. Other than the last paragraph preceding the claims, is there any other language in the written description portion of the patent that you'd point to to

support a construction of the phrase "positioning means" to include the use of a fluid?
A. Refer you to, again, to column 4, 9 through 12, where the radioactive source can be incorporated into or delivered in a solid, liquid, or gaseous form, together with the last paragraph before the claims.
Q. But with respect to column 4, lines 8 through 10, would you agree that that language is directed to the different forms that the radioactive material may take, that is, solid, liquid, or gas?
A. And the delivery of such forms. We're not talking about just the forms it can take. We can say -- it says that can be "incorporated into or delivered in a solid, liquid, or gaseous form, and the delivery of such forms is considered to be within the scope of the

subject invention."
Q. All right.
A. "Delivered" means, to me, "delivered."
Q. Well, let's see if we can break it down.
The language, quote, these materials may be incorporated into or delivered in a solid, liquid, or gaseous form, end quote --
A. Right.
Q. -- would you agree that that language is directed to the different forms that the radioactive material may take?
A. I don't think it limits it at all.
Q. Does it say anything about how it's delivered?
A. Yes, it does. It says it's delivered in a liquid, solid, or gaseous form.
Q. The radioactive material is delivered in a liquid, solid, or gaseous form; correct?
A. Or delivered in a liquid, solid, or a gas.
Q. Well, the language says, quote, these materials may be incorporated into or delivered in a solid, liquid, or gaseous form, end quote; correct?
A. Uh-huh.
Q. And the "form" in that sentence is referring to the form of the radioactive material, isn't it?
MR. TEIXEIRA: Object to the form of the

question.
THE WITNESS: But it also says that it -- that it's delivered in that form, which -- which means -- which means it's brought to the site of the lesion in -- in that form.
MR. BROWN: Q. The radioactive material is brought to the site of the lesion in a solid, liquid, or gaseous form; correct?
A. And -- and it can be delivered in a solid, liquid, or a gas.
Q. Where does it say that?
A. That's what it says to me.
Q. The phrase, "these materials," would you agree that that is referring to the radioactive materials?
A. Yes.
Q. So when the sentence reads, quote, These materials may be incorporated into or delivered in a solid, liquid, or gaseous form --
A. Uh-huh.
Q. -- end quote, am I correct that the form that's being referred to is the form of the radioactive materials?
MR. TEIXEIRA: Objection. Asked and answered.
THE WITNESS: No, that's -- that's really not correct, because that implies that it is the natural

state of the radioactive material, and this means -- what this means is that you can take a radioactive material which is, for example, not in a liquid form, and put it in a liquid, and deliver it that way, and that, taken with the last paragraph before the claims, would certainly allow you to do that.
MR. BROWN: Q. So you're construing the term "form" to refer to not only the form of the materials, but to the -- the manner in which the materials are delivered?
MR. TEIXEIRA: Objection. I don't believe he testified to that.
THE WITNESS: Sorry. I didn't hear that.
MR. TEIXEIRA: I said objection, you didn't say that.
MR. BROWN: Q. Is that what you're testifying?

A. Try that again.
Q. Are you contending that the use of the word "form" at column 4, lines 8 through 10, refers not only to whether the radioactive material is a solid, liquid, or gas, but also to the manner in which the radioactive material is delivered to the treatment site?
A. Or the vehicle, taken together with the last paragraph before the claims.

Q. So you're saying "form," in -- at column 4, lines 8 through 10, is not limited to the form of the material, the radioactive material?
A. I think we've said that before. It doesn't necessarily matter if the radioactive material is found in its natural state, in a solid or a liquid or a gas, because what this contemplates is you could take radioactive material in any form and combine it with a solid, a liquid, or a gas, and deliver it.
Q. But my question is whether this sentence addresses at all the manner of delivery, or does it only refer to the form of the radioactive material?
A. It says delivered, so I think it addresses -- taken together with the last paragraph before the claims, I think it certainly means the manner in which it's delivered, yes.
MR. TEIXEIRA: Are we talking about the complete sentence, or up to gaseous form, comma?
MR. BROWN: Q. We're talking about, quote, These materials may be incorporated into or delivered in a solid, liquid, or gaseous form, end quote.
Correct, Mr. Hess?
A. Uh-huh.
MR. TEIXEIRA: For the record, that's not the complete sentence.

THE WITNESS: Well, let's see what the complete sentence says.
MR. BROWN: Counsel, you have continually, throughout this deposition, engaged in improper objections, and if you continue to do so, we're going to take it to the judge because --

MR. TEIXEIRA: Be my guest.
MR. BROWN: -- you know very well that your objections have been improper --
MR. TEIXEIRA: They have not.
MR. BROWN: -- your speaking objections throughout.
MR. TEIXEIRA: If you have a problem with it we can go to the Court, but all I'm saying is that your question does not incorporate the complete sentence.
MR. BROWN: There was no reason for that comment, Counsel. My question was clear. You're simply trying to coach the witness.
MR. TEIXEIRA: I'm not trying to coach the witness, and I resent that, and if you have a problem, you can take it to the Court.
Rob, you can go ahead and answer the question.
Is there a pending question, Leigh?
(Record read as follows: "Q. We're talking about, quote, These materials may be incorporated into

or delivered in a solid, liquid, or gaseous form, end quote.
"Correct, Mr. Hess?
"A. Uh-huh.")
THE WITNESS: So is there a question? I'm sorry.
MR. BROWN: Q. My question is whether the sentence, quote -- or portion of the sentence, quote, These materials may be incorporated into or delivered in a solid, liquid, or gaseous form, end quote, addresses the form of the radioactive material, or addresses the manner in which it's delivered, or both.
MR. TEIXEIRA: Objection to form, and asked and answered.
THE WITNESS: I think -- I think that both, when taken in the context of the requirement of a positioning means and the last paragraph before the claims.
MR. BROWN: Q. I'm not sure I understood your answer, Mr. Hess.
What did you mean by taken in the context of positioning means?
A. Well, we're talking about in -- we're talking about delivery, we're talking about positioning means,

and we're talking about modification and alternatives

could be practiced within the spirit of the invention, so I think, if you put all of those things together, you get distinctly that possibility.

Q. But my question was directed to the portion of the sentence which reads, quote, These materials may be incorporated into or delivered in a solid, liquid, or gaseous form, end quote.

Is it your contention that the word "form" in that portion of the sentence refers both to the form of the radioactive material and the manner in which that radioactive material is delivered to the treatment site?

MR. TEIXEIRA: Objection to the form of the question.

THE WITNESS: It is my contention that it may be both.

MR. BROWN: Q. Now, your counsel apparently wanted to bring to your attention the fact that the sentence goes on to read, quote, and the delivery of such forms is considered to be within the scope of the subject invention, end quote.

Do you see that portion of the sentence?

A. I do.

Q. Is that portion of the sentence directed to the form of the radioactive material?

MR. TEIXEIRA: Objection to the form of the

question.

MR. BROWN: Let me rephrase the question.

Q. In that portion of the sentence which reads, quote, and the delivery of such forms is considered to be within the scope of the subject invention, end quote, what is being referenced when using the phrase, quote, such forms, end quote?

A. I'm not sure I understand the question. I mean --

Q. What does "such forms" refer to in that part of the sentence?

A. It means the -- it means the -- it means the -- the vehicle in which the -- again, we're not

talking about the natural states of the radioactivity, so if they're incorporated into a liquid, solid, or gas, then that liquid, solid, or gas becomes -- can become the vehicle that delivers the radioactive material to the -- the site of the lesion.

Q. So are -- are you talking about the situation where the radioactive material itself is the medium used to deliver the material to the treatment site?

A. No. I distinctly said that wasn't necessary, that the radioactivity -- the radioactive material does not have to exist in a liquid, gaseous, or solid state to be put into that medium and delivered. It's not a

necessary requirement that it have the same state as the medium into which you're putting it.

Q. So if we look at the portion of the sentence which reads, quote, and the delivery of such forms is considered to be within the scope of the subject invention, end quote, you construe the reference to, quote, such forms, end quote, to include a reference to the manner in which the radioactive material is delivered?

A. It could, yes.

Q. Did you ever envision using a fluid to move a radioactive element to the site of stenosis?

A. Yes.

Q. When?

A. I don't recall.

Q. Do you have any documents that show you, in fact, possessed the idea of using a fluid to transport the radioactive material to the site of stenosis?

A. I don't know.

Q. What -- what do you regard as being the function of the positioning means?

A. The function of the positioning means is to get the radioactive source to the site of the lesion and -- and to remove it.

Q. Claim 1 of the '168 patent uses the phrase

"operatively connected."

A. Yes.