



Artist's conception of the Titan Corp.'s "SureBeam" electronic pasteurization plant in Sioux City, Iowa, which can process 80,000 hamburger patties per hour.

beef, which is a precursor to a lot of the hamburger patties, that's where the market exists, and that's where the market will be in the gamma sphere. And this will have to be done carefully; otherwise, there will be off-taste in the meat.

**EIR:** But that's something that has been particularly researched.

**Welt:** It has been researched, and the technology is there. I think that a lot of people who are going around now, talking this up, don't make it clear to the meat industry, and I think that there has been some confusion about the throughput. In other words, are they going to put through 2,000 pounds an hour, or 500 pounds an hour—the economics are going to vary greatly. That's why we have told them, that before they make these commitments, do the proper testing, design the test matrix in such a way that you are able to do all the food science work ahead of time.

The irradiation is the easy part. The verification of dose, that's easy today. It's the food science—certain additives that you may want to put into the food, antioxidants, perhaps, or certain spices, which the meat industry may normally want to have. They have to remember: If you irradiate raw meat, and you get an approval from the FDA to do so, that's one thing. But if you now take that same raw meat, and you decide that you are going to add spices to the product, you have to make certain that the FDA is going to consider that to be the same safety approval that they just gave for the other product. You can't keep adding things without going back to the FDA, and then you have to recheck with the USDA to make sure that they are in agreement for marketing that "new" product.

So, it's not easy. The food industry has a lot of work cut out for itself. It's not going to be this slam-dunk that a lot of

people have said. I don't think you're going to see any public companies whose stock will just soar overnight. It's going to take a growth period. It's a good technology. It has to be put in place in a sensible way. It takes people who understand the business. I think one of the dangers in this industry, is that a mistake could be made, and if a food industry gets burnt, that could have a great impact on their desire to move ahead in this area.

I conclude by simply saying, the law of the land is still the same. If your product can cause injury, and you have a technology that can avoid the injury, and you fail to use it, you are liable for damages. And that's a hard nut for the industry to swallow, because a company could be put out of business with a class-action lawsuit, or something like that. And the only one who benefits from that is you know who, and it's not the public.

**EIR:** Lawyers. . . .

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## Interview: Wil Williams

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# Titan ready to process 80,000 burgers per hour

*Wil Williams is a vice president of Titan Corp. in San Diego, which has built the first electron-beam food irradiation plant in the nation, in Sioux City, Iowa. He was interviewed by Marjorie Mazel Hecht in December 1999, shortly after the U.S. Department of Agriculture (USDA) published its final regulations for the irradiation of red meat.*

**EIR:** What are Titan's plans, now that the USDA regulations were announced on Dec. 14?

**Williams:** The regulations allow the electronic pasteurization of red meat, which is the only proven way of killing *E. coli*. They had already previously approved chicken. So, after the 60-day waiting period, we intend to go right into production, full throttle, so that they can do the test marketing.

**EIR:** Is your new plant in Sioux City ready to go?

**Williams:** Our plant is ready to go right now. In fact, we are starting immediately on testing, to make sure that everything is tweaked out, so that on day one, on the first day that we are allowed to do it, we'll be in full production.

**EIR:** What's the capacity of the plant?

**Williams:** It can process 250 million pounds of beef—or other products—per year. I did a quick calculation, and that's something like 80,000 hamburgers an hour. Now, of course,

it depends on the product — some things are pasteurized a little faster than other things. So, you can't be exact about it.

**EIR:** You now have some of the biggest companies in the country ready to go, and I would assume, therefore, that you'll be turning out those 80,000 per hour.

**Williams:** Well, part of it will be also chicken. We have under contract approximately 75% of the ground beef industry and approximately 50% of the chicken providers. In the case of chicken, that's about 25 billion pounds per year, and in the case of ground beef, it's about 8-9 billion pounds of ground beef per year. Most of those agreements are exclusive in nature. In other words, if they pasteurize food, they will use our process.

**EIR:** Right now, these companies do intend to go into the pasteurization market. Tyson, for example, has announced test marketing.

**Williams:** That's right. And the other companies are Cargill, Empac, Huisken Meats, IBP, and there may be more. Of course, this technology is different from gamma technology, in that it can be put right on the production line. The facility in Sioux City will actually be like a cold room; the product will be frozen and in its final packaging. So, when it comes off the trucks, and into the pasteurization facility, it will get on a conveyor belt, circle around, and come back out five minutes later and get back on the truck. The actual pasteurization only takes a couple of seconds.

**EIR:** Will it be on pallets?

**Williams:** It will be in boxes. Each box, if we're talking about hamburgers, is about six hamburgers deep, because the effective range of the electron beam is 3.75 inches — just a little less than four inches. So, we have to limit the product to that size. . . .

**EIR:** So, it's all done in the frozen state?

**Williams:** Yes, and because it's processed frozen, there is no change in the color, texture, taste. . . .

**EIR:** And smell: I think that was one of the things they found out very early on, that if they irradiated meat when it was frozen, they didn't get any odor.

**Williams:** That's right — there is no change at all. That is one of the lovely things about this technology. The beam doesn't change the temperature of the product.

**EIR:** It's called a "cold" process, for that reason?

**Williams:** And, because the beam does not elevate the temperature of the product, you keep all the merits of the frozen state. The other technology requires you to put pallets of food into a chamber that has an ambient temperature of about 110 to 130°F, and it sits there being irradiated by the isotopes for about 15 minutes, depending on the product. It's a remarkable

difference from having to place the product in a chamber, compared to building this machine at the end of the production line, and it's envisioned that when the Tysons of the world, or IBP, go into full production, that this will be at the end of their production line.

**EIR:** You mean, right on the site where they process the meat, and package it for shipment to consumers?

**Williams:** That's right, and because it's so high-speed, it works perfectly in that scenario. You can do chicken parts, luncheon meats, hot dogs, hamburgers — anything like that works very well on e-beam.

**EIR:** Now, I imagine that the producers themselves have lined up customers — fast food chains, for instance. Is that a major part of the anticipated business? Or is this going to supermarkets?

**Williams:** I don't know where they'll do their test marketing. My guess is that the fast-food places will be a prime place of sale. One of the worst disasters we had in American public health was at Jack-in-the-Box. . . .

**EIR:** When will Titan's Hawaii facility be available?

**Williams:** It will be open in the early spring — March or April. That facility works on X-ray [technology]. Its specific goal is to kill fruit flies. They work on large bulk product. In this case, it doubles the papaya shelf-life, and at the same time, it gets rid of all the pests.

**EIR:** And they can pick the papaya when it's riper.

**Williams:** It tastes better. I've had it, and it's delicious. . . .

**EIR:** How did Titan get involved with food irradiation, or pasteurization?

**Williams:** In the past few years, Titan has been working in the sterilization area. We have built nine facilities, of which seven will be for sterilization of medical products. We have something like 120,000 to 130,000 hours of expertise in the sterilization arena, using linear accelerators. And since these things get sterilized in seconds, that's a lot of product and time. So, from there, Titan took the step into the pasteurization of food. If you want to go way back, in the early 1980s, the company was involved in certain government contracts involving Star Wars, which involved linear accelerators, and I am told that the genesis for this idea actually started as far back as then, and it's just been a step at a time until they got here. . . . In fact, we were part of a contract with Lawrence Livermore back in 1982. . . .

So, we've been in it for quite a while, and I don't think anybody out there has the amount of experience that we have, and we're the only ones that actually have a facility. There are only two facilities for pasteurization of food in the nation. One is in Florida, which uses gamma rays, and the other is ours.