

Please welcome Vice President, Business and Technical Services PG&E, Maureen Zawalick, Senior Managing Director Global Energy Industry NVIDIA, Mark Spieler, and Founder and Chief Executive Officer, Atomic Canyon, Trey Lauderdale.

[MUSIC PLAYING]

Well, they didn't warn us about those bright lights, but I'm going to adapt here. It's all about being nimble. Well, good afternoon, San Jose. I'm so excited to be here and talk about what's been going on at Diablo Canyon Power Plant.

Diablo Canyon Power Plant is the last operating nuclear power plant in the state of California. It's the largest generating facility in the state of California, largest clean generating facility in the state of California, and powering almost 10% of Californians, over three million people, which is just outstanding.

Now, I had all my talking points and I just tore them up in the back there, because I think either Quinn and/or Mike Delaney, by design, had us follow Patti and Darryl's panel, and they were talking about nuclear. So we're going to double-click down on that and talk about what we've been up to at Diablo Canyon with leveraging NVIDIA technology and AI.

But one thing I really want to emphasize before I turn it over to these experts is, you've heard the word, Copilot. And I know that's the name of a product and so forth. And we've heard about nuclear being heavily regulated. Patti talked about our license renewal application. Yes, it was 3,000 pages.

It would be great if we would have had AI in that technology for searching and developing that. But being in such a heavily regulated industry, which is very important, it doesn't mean we can't be efficient. And what we're bringing to the nuclear industry, is that needed efficiency to advance our clean energy goals across the United States to meet all of our climate goals and so forth.

And our regulator, our vendors, our suppliers, our operating fleets across the country, we need that efficiency. And so what's really, really exciting about this, is all the possibilities. You heard Patti talk about it earlier, the word, possibilities.

We've lived that mantra of what needs to be true, what are the possibilities, since we got the call from the governor's office and the state legislators to continue to operate Diablo Canyon. Probably one of the best calls I ever received.

So in September of 2022, instead of shutting down Diablo Canyon, would have shut them down this month, we get to continue to operate Diablo Canyon. What's so exciting about that, is that it paves the way for so many other stories out there. And you heard Darryl talk about TMI starting up and Palisades in Michigan starting up.

So we're the case study. So we have pivoted this nuclear plant and we've pivoted very efficiently, but there's so much more we can do. So we're not replacing operators, we're not replacing maintenance workers, we're not replacing engineers, we're not replacing regulatory experts.

We are augmenting them. I call it augmented intelligence. We are giving them co-pilots, in my term, not a trademarked term, to take them to another level of productivity. To take our coworkers to another level of efficiency.

And to make sure we're maximizing our coworkers in where we want them to be focused, problem-solving and decision-making, and not data mining through a lot of records and information. We have over 9,000 procedures at Diablo Canyon that implement all those regulations. That's great. We have over nine million records, and billions of pages of data to sort through.

We want our team focused on taking that information that is generated and get into that problem-solving, the possibilities, the outcomes, the decision-making, where we can use that talent. So with that, I want to turn it over to Marc and talk about what you've been up to with helping us.

Sounds great. Thank you so much. First, I'd like to express my sincere appreciation and thank everybody. that's with PG&E and other utilities in the room. I woke up this morning, flipped on the light switch, and lights came on.

Whoo!

I'm sure your customer service lines didn't light up this morning with people thanking you for that. And after spending 25 years at the intersection of technology and energy, when things are working well, people tend to forget. When they don't work, they tend to let you know. So, thank you for that.

Secondly, NVIDIA has had an incredible few years. And if I would have been here presenting four or five years ago, most people wouldn't be familiar with NVIDIA, or they were gamers. So for the gamers in the audience, thank you. You've, you've helped us reach where we are today.

We started the company to improve the gaming experience, and we've evolved to solve some of the world's most challenging problems. It's all physics-based. It's all AI-based. Everything we do is to solve really complex problems.

But NVIDIA is an accelerated computing platform company. We don't build solutions for nuclear. We don't build solutions for the grid. We don't build solutions for energy, health care, telco. We partner with companies that do.

And when you saw Darryl up here and I know Sean just was up here, and we partner with the cloud providers, with the OEMs that put things on prem, with robotics companies and embedded technology companies, to solve the problems that the industry needs, and that the world needs. And we make that available.

Today, you're going to have a great opportunity to see what I would guess, is one of Jensen's favorite parts about NVIDIA, and that's the startup community and new companies. So NVIDIA has a program called Our Inception Program. We work with about 16,000 AI startups, because this is the future of many industries.

And over 600 of them now are in the energy space, in the clean energy space, trying to create a huge step change in the way that the energy companies work and how they can deliver tremendous value leveraging our platforms, and the significant amount of data that's available within energy companies.

We're a very data-centric organization and industry. And so, therefore, I'm guessing anybody working in the energy industry today has collected petabytes of data over the last 30, 40, 50 years or longer. And being data-centric is great. Being data-driven is even better.

And so, how do we turn that data into knowledge? Well, we need electrons to do that, and there will be a lot more discussions today about how many electrons it takes to turn data into knowledge. But I think Trey and the work that they're doing at Atomic Canyon is incredible.

And this is what makes NVIDIA proud more than anything, is to help smaller AI companies become very large AI companies. And we've done this a lot of times. And, I heard from the plug and play people today, once again, investing in small companies to solve problems is great.

They'll eventually become big companies. They'll get bought by bigger companies, or they'll just continue to solve the problems that they were meant to solve. So with that, let me turn it over to Trey, so you can share the great work you're doing.

Well, thank you so much. Trey Lauderdale. I'm the CEO and Founder of Atomic Canyon. I believe it was the gentleman from GE that said, the worst thing a startup can do is partner with PG&E. I am one of those startups that is partnering with PG&E, and I think it's going to be absolutely spectacular.

Before I talk about our company and what we're doing, I have to say, nuclear power is personal to me, and I'll explain why. You saw that beautiful picture of Diablo Canyon on the water, the mountains, right? 10 miles from there, that is where I live. I am a resident of San Luis Obispo, California.

My wife, my two kids, and our Labradoodle, Ralph, if you live in SLO you have a Labradoodle. There's many of them. We all live 10 miles from a nuclear power plant. And when I tell people that, I kind of like, whoa, what do you mean? How is that?

It is phenomenal. A nuclear power plant is a phenomenal neighbor. Do you know why? I talk to people in my community, most people actually don't even know Diablo is there, but they feel Diablo's presence every single day.

Do you know why? Our public schools are awesome, because of Diablo Canyon. We get tax dollars from Diablo Canyon. Is Matt Burkle, I know he's here, Director of Operations at Diablo. There's my boy, Matt. See you Friday. Friday Night Lights? He coaches a bunch of kids. So do I. His team is way better than ours. We're hoping to get our first win this Friday.

They're members of the community, and they have real impact. So this is personal to me. And my journey into nuclear started because I live 10 miles from Diablo Canyon. So it's a new startup, but I have some experience, 15 years in digital health.

And I won't go through the whole story, but I started originally, the first company that brought iPhones into hospitals for clinical communication. And when I say that, everyone here is like, well, what else would people use?

Back in 2008, when I used to visit organizations like UCSF, Cedars-Sinai, and I'd say, hey, your nurses and doctors, they should use iPhones to communicate, to receive alerts, to view the EMR, the electronic medical record.

I used to get laughed at. No, no, no, I'm not kidding. I would get told, Trey, our standard is BlackBerry. That's the future. Go build on the bed server. We don't use iPhone PDAs. Do you guys remember that? Smartphones used to be called PDAs back in the day.

And lo and behold, over time, things changed. And now if you visit Stanford or UCSF, two phenomenal organizations, the nurses and doctors there, they all carry these iPhones called, the Volt phones. They're integrated to the electronic medical record, to multiple systems that produce real-time notifications.

Algorithms. I guess we'd call it AI if we would have started it today. Algorithms and big data send that information to the right person at the right time. And it was fantastic. We went through that journey of bringing a new technology into an enterprise.

And I bring up that story, because it's really easy to say, AI is going to transform our industry. I think it's true. But I also think the transformation is going to happen in many ways that's very challenging for us to comprehend in five, 10, 15 years.

So my journey into nuclear, being in a community close to Diablo Canyon, I started learning about this incredible technology. And I had the privilege to meet with Maureen, her team, and really go in and understand what are some of the problems that they face.

So we went, we observed, we learned, and we realized we're going need a lot of data if we're going to train AI models to go in and solve some of these problems. So the first thing we did, nuclear is all about transparency. Transparency, trust, reliability.

There's a website, Nuclear Regulatory Commission, where you can go download all sorts of information on the nuclear industry. So we downloaded 52 million pages of documents. We started running AI models against that.

Guess what. If you run AI models against nuclear data, sometimes you'll say, AI models will hallucinate. So hallucinate, that's a really friendly sounding word. Hallucinate, that's fun, kind of like magic. No. That's when the AI makes stuff up. That is very bad. Very, very bad, especially in nuclear.

So, to solve that, you need a supercomputer. So we ended up partnering with Oak Ridge National Laboratory, home of Frontier, the world's fastest supercomputer, and we took the NRC data that was available, we took the supercomputer, and we started training not to get too technical, sentence embedding models, which are basically ways of teaching artificial intelligence how to understand nuclear.

So we had this big research and development project, because guess what. If you're going to deploy artificial intelligence at a nuclear power plant, you better make damn sure this thing works and it works reliably. And that was the number one priority we had from the outset of our company.

So as we were building the models, spending time at Diablo, observing, the first message I sent to Maureen was, I don't want to talk technology. Like, everyone immediately thinks AI is tech. No, I want to understand, what are your business problems. What are the top things that keep you up at night? What are the challenges that your organization faces?

So we spend time talking to Maureen, her team, frontline workers, and we quickly realized one of the biggest challenges that the nuclear industry faces, is there's a whole bunch of data, billions and billions of records at Diablo Canyon, but it's really hard to find things.

So we went and with our partnership with NVIDIA, we're putting a number of H100s on premise at Diablo Canyon. We're using a series of AI models, optical character recognition, computer vision, to understand what's in those documents.

The models that we built at ORNL, Oak Ridge National Laboratory, that understand AI, will then help people find the right information. And it's simply a generative AI search, specifically built to be on premise. I know in Silicon Valley we don't do on prem anymore, but welcome to nuclear.

We're back on premise, secure, no data leaves. And it's a really great foundational element and a really good use case to help the wonderful employees at Diablo Canyon work more effectively, get access to the data they need, so they can do things, like work on \$100 million license renewals, which we hope if it has to happen again in 40 years and we're renewing for another 60, we will definitely work to streamline that process.

So it is a privilege and an honor to be serving this industry. Nuclear power, it's having a moment. I know our friends at Microsoft are talking about Three Mile Island. It's not just them. We see Google opening nuclear power plants. You see Amazon talking about, or signing agreements with X-energy to open nuclear power plants.

We are at a moment where nuclear power is going to be a key foundational element of the clean energy revolution. And look, AI was born in California. There is no reason that the AI revolution and nuclear shouldn't also be born in California. And that's what we're here to do.

So, thank you so much for the opportunity. Thank you to our partner, NVIDIA. We could not do it without this partner. And of course, Maureen, thank you so much for all the support, and it is fantastic to live by a nuclear power plant. It is fantastic to serve this industry. So thank you so much. I'll pass it back.

Thank you. So just to wrap it up, you can see the excitement, the opportunity, the possibilities with this partnership with NVIDIA, with Atomic Canyon, with PG&E, with Diablo Canyon. I can't emphasize enough, I've been in the industry 34 years, the amount of data and information that is in the industry.

And we're just starting on the cusp of it at Diablo Canyon, but with the ultimate goal, we live in an industry, or we thrive by this in the nuclear industry, of a culture of continuous improvement. And part of that is a culture where we are not competitive. We share operating experience and data information across all of the current 94 operating units in the United States.

But if we're going to triple our clean energy nuclear power fleet that's been talked about at the last two COP summits and so forth, and Department of Energy and the Biden administration, we've got to get efficient. There are so many use cases, and this is just the start of it.

And just in closing, so proud to power California by Diablo Canyon. Got my T-shirt on, too. And just really appreciate all of you being here. And for the thousands of people that are streaming into this, as well, this is just the beginning. And hopefully, we'll be back next year talking about other nuclear plants that are using this to help.

So, thank you all. And I think lunch might be following us or something else. So, appreciate it.

Thank you.

Thanks, everyone.

[APPLAUSE]