BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

LS-270

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, ET SEQ, FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE REDHAWK POWER PLANT EXPANSION PROJECT, WHICH INCLUDES THE CONSTRUCTION OF NATURAL GAS TURBINES, A 500kV SWITCHYARD AND RELATED FACILITIES, ALL LOCATED TWO MILES SOUTHEAST OF THE INTERSECTION OF ELLIOT ROAD AND WINTERSBURG ROAD IN MARICOPA COUNTY, ARIZONA.	)	DOCKET NO. L-00000D-24-0156-00234
	)	EVIDENTIARY HEARING

At: Goodyear, Arizona

Date: August 19, 2024

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REPORTER'S TRANSCRIPT OF PROCEEDINGS

VOLUME I

(Pages 1 through 145)

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BE IT REMEMBERED that the above-entitled and numbered matter came on regularly to be heard before the Arizona Power Plant and Transmission Line Siting Committee at Hampton Inn & Suites, 2000 North Litchfield Road, Goodyear, Arizona, commencing at 1:00 p.m. on August 19, 2024.

BEFORE: ADAM STAFFORD, Chairman

LEONARD C. DRAGO, Department of Environmental Quality
ROMAN FONTES, Counties
(Videoconference appearance.)
DAVID FRENCH, Arizona Department of Water Resources
(Videoconference appearance.)
JON H. GOLD, General Public
NICOLE HILL, Governor's Office of Energy Policy
(Videoconference appearance.)
MARGARET "TOBY" LITTLE, General Public
(Videoconference appearance.)
GABRIELA SAUCEDO MERCER, Arizona Corporation Commission

APPEARANCES:

For the Applicant:

SNELL & WILMER
By: Matthew Derstine
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Phoenix, Arizona 85004

PINNACLE WEST CAPITAL CORPORATION
By: Linda Benally
400 North 5th Street, MS 8695
Phoenix, Arizona 85004

APPEARANCES (Continued):

For the Intervenor Western Resource Advocates:

WESTERN RESOURCE ADVOCATES
By: Emily Doerfler
1429 North 1st Street, Suite 100
Phoenix, Arizona 85004

CHMN STAFFORD: Let's go on the record. Now is the time set for the hearing on the application of Arizona Public Service Company, Docket Number L-00000D-24-0156-00234, or Line Siting Case 234.

Let's take roll call of the members.

Member Mercer?

MEMBER MERCER: Present.

CHMN STAFFORD: Member Gold?

MEMBER GOLD: Present.

CHMN STAFFORD: Member Drago?

MEMBER DRAGO: Present.

CHMN STAFFORD: And we have some members attending virtually.

Member French?

MEMBER FRENCH: Present.

CHMN STAFFORD: Member Fontes?

MEMBER FONTES: Present.

CHMN STAFFORD: Member Little?

MEMBER LITTLE: Present.

CHMN STAFFORD: Thank you.

I'll remind the public that the ex-parte rules are in effect and you're not to speak to the Committee members about the substance of the case outside, off the record, it should be during public comment and not during the hearing.

Let's take appearance of the applicant please.

MR. DERSTINE: Good afternoon, Mr. Chairman, Members of the Committee, Matt Derstine from Snell & Wilmer, appearing on behalf of Arizona Public Service Company.

MS. BENALLY: Good afternoon, Chairman, Committee Members, Linda Benally, appearing on behalf of Arizona Public Service Company, the applicant in this case.

CHMN STAFFORD: And Western Resource Advocates has filed a notice of intent to be a party. Take appearances for Western Resource Advocates, please.

MS. DOERFLER: Hello, Emily Doerfler, on behalf of Western Resource Advocates.

CHMN STAFFORD: All right. Members, can I get a motion to admit WRA as a party to this case?

MEMBER GOLD: So moved.

MEMBER MERCER: Second.

CHMN STAFFORD: Further discussion?

(No response.)

CHMN STAFFORD: All in favor say "aye."

(A chorus of "ayes.")

CHMN STAFFORD: Opposed?

(No response.)

CHMN STAFFORD: Hearing none, WRA is now a party to the case.

Mr. Derstine, would you like to a make an opening statement?

MR. DERSTINE: I would. Thank you, Mr. Chairman. Everything coming through okay on my mic on this end and the members? Okay. I'm getting a thumbs up.

Again, Mr. Chairman, Members of the Committee, good afternoon. Here you are again. Last week you had a -- four days of hearings considering the CEC application for the Project Bella project. And this week you're back to hear about the Redhawk Expansion Project. So that's two plant siting cases in two weeks back to back. So I hope you were able to get some rest over the weekend and relax a little bit, and we appreciate you being here for a second hearing on the heels of a hearing that you had last week in Pinal County.

As I was thinking about what I would say in my opening, I found it difficult not to compare the two cases. So my thought was, I think I'll start there and at least touch on some of the similarities and differences between the two cases, the projects.

Both applicants filed a voluntary CEC

application, with the understanding that the Commission's decision on the UNSE disclaimer application, we proceeded with filing our CEC application for this project, and really followed the direction from general counsel for the Commission, who indicated at open meeting that notwithstanding the Commission's decision in that case, that applicants would be free to seek a CEC, based on the variety of interests or factors. And so we appreciate you taking the time to hear this application, and we will appreciate the Commission considering the application when it makes its way to them. So thank you.

Both projects involve the same generation technology. Both projects involve the (GE) LM6000. I think the members of this Committee are, by now, experts in the LM6000, having heard the UNSE disclaimer application, and having heard the application last week and a lot of testimony about the generation technology.

The LM6000 units, as you heard last week, are hydrogen-capable, they're capable of burning up to 35 percent blend of hydrogen and natural gas, but I think, as you heard in testimony last week, hydrogen is not commercially available at this point for power plant use. I know some members of the Committee indicated that they're optimistic and encouraged by developments in hydrogen production that are taking place in the state,

and that are hopeful and optimistic that hydrogen may be one of the pathways to help the utilities in this state -- in this state reach their clean energy goals. And APS joins in that optimism and hope. But, again, we're -- we've got a ways to go before hydrogen is available for use at a -- at a plant like the Redhawk Expansion Project, and we'll continue to watch that space.

Both projects involved and utilize state of the art emission controls and will require Title V air permits. I know you heard a fair amount of testimony on the air permit application last week. You'll hear similar testimony this week. The difference is that the air emissions for Project Bella go through Pinal County Air Quality. This case, this project, is in Maricopa County, so it will go through the permitting under the Maricopa County Air Quality.

Maricopa County has different air quality standards or attainment thresholds than what you heard about for Pinal County, so you'll hear more about that testimony. But again, both projects have to comply with the Clean Air Act, and meet the thresholds and limitations on air emissions required by the act.

Lastly, in terms of similarities, groundwater use, this project, the Redhawk Expansion

Project, will utilize approximately 300 acre feet of groundwater and that is well within and under the allocation of groundwater that APS holds at the Redhawk plant for the existing plant operations.

APS was -- when the water rights were converted from agricultural to industrial use, APS was granted approximately the right to utilize around 3,000 acre feet, a little more than that, per year, and this project adding that onto the water that -- the groundwater that's being used for the existing Redhawk Plant, takes us to right about 800 acre feet. So you'll hear a significant amount of testimony about that. The existing water use at the Redhawk Plant and the additional incremental water use that will come from the expansion project.

So those are, I think, some of the key similarities, but there are important differences. APS is a public service corporation. The applicant last week for Project Bella is an independent power producer. The Redhawk Expansion Project will serve APS customers. Project Bella will enter into tolling agreements or Power Purchase Agreement with various other load-serving utilities to allow them to use that capacity resource to serve their customers, but this project is going to be utilized by APS to serve its own customers, to ensure

reliable service to its own customers.

Another key difference is that the Redhawk Expansion Project is being constructed at an existing plant. You can see on the screen to your right is an aerial photo of the location of the Redhawk Plant. The Redhawk Plant is approximately 50 miles west of Phoenix. It sits among -- well, it's about four miles south of the Palo Verde Nuclear Generating Station, and it sits within a couple miles of the Arlington Valley Combined-Cycle Natural Gas Plant and Mesquite Natural Gas Plant. All three of those combined-cycle plants, Redhawk, Mesquite, Arlington Valley, were all developed and went into operation in the early 2000s. The closest resident to the Redhawk Plant is 1.8 miles away and the other area residents are 2 miles or more away from the plant site.

So those are some of the key similarities and differences between the two projects, the project you heard last week and the project you're going to hear about this week. For these cases we always talk about the need for the project, an important consideration both for the Committee and for the Commission. As I was reading, you know, just learning about the need for this project, it struck me that the need is in many ways the same that was identified last week. That is, this resource, the LM6000, provides a fast-ramping, firm but

flexible capacity resource. According to the APS -- the application for this project, the project ensures that APS has a reliable generation capacity to respond to fluctuations in load demand and intermittent resource output, and can reliably supply power during periods of peak demand. That's the need.

Now, I am aware, and I'm sure everyone in this room is aware, that there are those -- there are groups and individuals who oppose the use of natural gas peaking plants. And as I was reading a bit about kind of to try to gain an understanding of where those lines are drawn in terms of support or opposition for projects like this, I came across this quote: "Utilities have a pretty good track record for being lazy thinkers, a gas-fired power plant is 2008's answer to energy problems."

I was struck by that quote, I think for -- for -- really for two reasons: One, I happen to know a gentleman who managed and operated coal and natural gas plants for a number of years, he's now retired, but he's one of the smartest people I know and have ever met. So the idea that utility operators and executives are lazy thinkers strikes me as simply being nonsense.

In addition, and maybe more importantly, through this case I've had an opportunity to meet with and learn from two of the folks who are responsible for

planning the resources that APS has to rely upon in order to provide reliable power to its customers, not only today, but out into the future. And you'll get a chance to hear from those -- those two witnesses, that will be Mr. Brian Cole, who is the vice president of resource management; Mr. Mike Eugenis, who is the director of resource planning, and they'll be two of the first witnesses you hear from us.

And I am certain that the two of them became frustrated with my inability to grasp a lot of the concepts that they were talking to me about, and I know that when I got to listen in to parts of the hearing last week and I heard Member Hill indicate that she had participated in a number of integrated resource planning forums and found the topics to be complex, I share her viewpoint. So much of this has gone over my head and -- and despite the patience of my witnesses, it's taken me a while to get my arms around it.

But you will have an opportunity to hear from Mr. Cole and Mr. Eugenis and you will have an opportunity to judge whether or not they are lazy thinkers and whether the decision-making process for selecting a resource, like the Redhawk Expansion Project, is the product of lazy thinking or is 2008's answer to energy problems.

I think what -- another thing you'll hear from Mr. Cole and Mr. Eugenis is that APS faces a number of challenges in terms ensuring that it can provide reliable service to its customers, who are, by the way, dispersed throughout the state. APS is a very large service territory. APS has to ensure that those customers have service every hour of the day, every day of the year. And that one of the key challenges that APS faces is replacing a thousand megawatts of coal generation, while still meeting significant increases of energy demand. So while it's taking a thousand megawatts of baseload generation off the table, it's also facing significant increases in energy demand.

It took APS 140 years to grow to a peak demand of over 8,000 megawatts. In just eight short years, APS anticipates that peak demand will increase another 40 percent. So how does it meet that challenge? What you'll hear from Mr. Cole and Mr. Eugenis is that APS meets that challenge through a diverse mix of new resources that will help ensure reliability. APS has plans to utilize solar, energy storage, and wind, and those new resource additions -- those renewable resource additions make up over 80 percent of the new resources that APS is bringing online in the next years.

And these new renewable energy resources

are critical to keeping pace with the anticipated growth and meeting APS's clean energy goals. I think what you'll also hear from Mr. Cole and Mr. Eugenis is that while these renewable resources are critical to keeping pace with anticipated growth and meeting APS's clean energy goals, that these renewable resources that you can see on the chart on the right, the solar, the wind, the battery storage -- well, the solar and the wind are intermittent non-dispatchable resources, and that those variable resources create challenges and pose risks to system reliability.

That statement that variability is a key challenge for the folks at APS and other utilities in terms of ensuring reliable service is supported by the Western Electric Coordinating Council, as I indicate there, a regional entity approved by FERC to ensure the reliability of the bulk electric system in the geographic area known as the Western Interconnection. You can see the Western Interconnection shown on the slide to the right in green.

And the North American Electric Reliability Corporation, NERC, which has the responsibility for ensuring reliability across North America, has delegated authority to WECC to monitor and enforce reliability standards in the western region, the Western

Interconnection.

And every year, WECC puts out a resource adequate assessment -- adequacy assessment, and that assessment for 2023 is the same as the -- reaches the similar conclusions that were reached in 2022, and that is, "Resource adequacy risks continue to grow. Variability remains the greatest risk because it contributes to demand at risk hours. To be resource adequate, industry needs to have enough energy to meet demand under a range of possible conditions. The more variable the system, the harder it is to accomplish this."

So how does APS meet the challenge of having enough energy to meet demand under a range of possible conditions? I think what you'll hear from Mr. Cole and Mr. Eugenis is that, again, it's a diverse mix of generation resources, including large amounts of solar and wind and battery storage, but that resource mix also includes natural gas generation, and in particular, resources like the Redhawk Expansion Project.

That's the need. Let me preview a little bit about the case and how we plan to present it to you. The -- as I mentioned -- let me see if I can back up here. Okay. The -- the Redhawk Expansion Project will be constructed and located at the existing Redhawk Power

Plant. The Redhawk Plant is a two-unit combined cycle plant. The expansion project, as you can see from the slide here, those eight LM6000 units will be constructed in this open space at -- within the perimeter of the existing Redhawk Plant.

In terms of environmental impacts, because the expansion project is being constructed within an existing power plant, within the perimeter of the existing plant, the environmental impacts from this project are minimal. In addition, I mentioned the air permit and the fact that the project will require a Title V air permit. In fact, it will require revision of the existing air permit for the Redhawk -- Redhawk Plant. And Ms. Carlton will testify concerning the application for that major revision of the air quality permit. And she'll discuss the air permitting process and the timeline for that.

You can see my slides are a little bit out of order here, but I'll have you follow me along on the right. I mentioned groundwater is an issue in this case, Mr. Mark Nicholls, who is the principal hydrologist for Haley & Aldrich will provide testimony on groundwater use for the expansion project. And, in fact, Mr. Nicholls will address the two factors in 40-360.13 that the Committee is required to consider. That is the

availability of groundwater at the site and the impact on the management plan.

In addition, Mr. Spitzkoff, who has appeared before this Committee on a number of occasions will testify concerning the transmission and the interconnection required for the expansion project, and he'll discuss the existing transmission infrastructure at the Redhawk Plant that allows for the interconnection of this new project, the reliability studies that are being performed or have been performed, and the status of the interconnection process.

How do I advance that slide on the right? Grace, are you able to advance my slide on the right?

There we go. Back up one, please. There we go.

And I think I missed one -- another area of testimony is going to be on our public outreach and engagement process, something that's critical to every project that APS presents to this Committee. APS utilized a robust public outreach engagement program that involved mailings, virtual open house, in-person open house, stakeholder outreach, social media. And you'll hear a -- the testimony from Mr. Turner and from Mr. Duncan about those outreach efforts and our compliance with and how we have satisfied all the various

statutory notice requirements for this project.

So the other tools that we plan to use to present the case to you include a flyover simulation, I think that we plan to get to this afternoon. So wherever we are in the testimony, we'll plan to stop at about 4:30 and have Mr. Turner present the flyover simulation so then you can then make a decision about whether this Committee wants to take a route tour. And we've made arrangements for that tour tomorrow morning, if you're so inclined.

We also have our PowerPoint slides in the exhibits, and you have a placemat. And hopefully the temperature in this room will stay cool enough that you don't have to use them as a fan as maybe you did last week, but I think that was a good suggestion from Mr. Moyes. So that's our case.

At the end of the case, we'll request that you grant us a CEC for this project. It's an important project. It serves an important need. And the evidence, the testimony that will be presented to you this week, I think supports the granting of a CEC for this project. So I appreciate your time.

CHMN STAFFORD: Thank you.

Ms. Doerfler?

MS. DOERFLER: Hello, I have something very

short for you today.

Mr. Chair, Chairman, Members of the Committee, WRA has been engaged in discussion with APS, and our understanding is that APS will be submitting an updated or otherwise amended proposed CEC in this proceeding that includes two new provisions related to future hydrogen utilization at the Redhawk facility.

The first condition mandates a reporting requirement if APS opts to use hydrogen-blended fuel for normal operations at the project. The report will address mainly the economics, the feasibility, and the safety of a burn -- of burning a mix of hydrogen fuel. The second condition requires APS to obtain a modified CEC under certain conditions, such as significant modifications to the Redhawk Plant as a result of APS's choice to burn a hydrogen-blended fuel.

On the condition these modifications to the sample CEC are adopted, WRA does not oppose APS's CEC for the Redhawk facility. WRA wanted to make you aware of this agreement, as it impacts our participation in this hearing. As a result of the agreement between the parties, WRA will be withdrawing all of its exhibits, which are as a result of last-minute negotiations still on the tablets that APS has generously provided. I believe they will be removed at some point before

tomorrow. WRA will also refrain from cross-examination of APS's witnesses. I am happy to participate in any manner in which the Committee believes would be appropriate.

CHMN STAFFORD: Thank you. So I guess the exhibits were never offered, so we'll -- it's up to you whether you want -- you said you won't be cross-examining?

MS. DOERFLER: Correct.

CHMN STAFFORD: Then it's up to you whether you stay or you go. You're not required to be here if you're not going to be actively questioning the witnesses, so --

MS. DOERFLER: Fair enough. Thank you.

CHMN STAFFORD: Thank you.

Mr. Derstine, would you like to call your first panel?

MR. DERSTINE: I would. Thank you, Mr. Chairman. Looking across the room, I see that I have the right folks in the right seats. Mr. Chairman, if you'd go ahead and swear our panel members.

CHMN STAFFORD: Do you want to call them and then I'll swear them?

MR. DERSTINE: Do you want me to do that first? Okay. I'll do that.

Let me start with Mr. Cole. Mr. Cole, will you state your full name and your business address for the record, please.

MR. COLE: Brian Cole, C-o-l-e, business address is 400 North 5th Street, Phoenix, Arizona 85004. I'm just checking that everybody can hear me okay?

CHMN STAFFORD: Yes.

And would you prefer an oath or affirmation?

MR. COLE: Oath, please.

(Brian Cole was duly sworn by the Chairman.)

CHMN STAFFORD: And Mr. -- is it Mr. Eugenis is next on your panel?

MR. DERSTINE: That's correct, Mr. Chairman.

CHMN STAFFORD: Mr. Eugenis, would you prefer an oath or affirmation.

MR. EUGENIS: Affirmation, sir.

(Michael Eugenis was duly affirmed by the Chairman.)

CHMN STAFFORD: And Mr. Van Allen?

MR. VAN ALLEN: Yes.

CHMN STAFFORD: All right. Oath or affirmation?

MR. VAN ALLEN: Oath.

(Peter Van Allen was duly sworn by the Chairman.)

CHMN STAFFORD: All right. They've been sworn.

Please proceed, Mr. Derstine.

MR. DERSTINE: All right. Thank you, Mr. Chairman.

BRIAN COLE, MICHAEL EUGENIS, and PETER VAN ALLEN, called as witnesses as a panel on behalf of Applicant, having been previously affirmed or sworn by the Chairman to speak the truth and nothing but the truth, were examined and testified as follows:

D I R E C T E X A M I N A T I O N

BY MR. DERSTINE:

Q. Mr. Cole, we're going to start with you. I want to make sure we've got the right deck loaded or we're starting in the right place. One second.

Good afternoon, Mr. Cole.

A. (MR. COLE) Good afternoon, Mr. Derstine.

Q. Why don't you start us out with introducing yourself to the Committee and giving them an understanding of your background and some of your

professional experience, please.

A. (MR. COLE) Sure.

Again, my name is Brian Cole, I'm the vice president of resource management at Arizona Public Service. I've got an educational background of an electrical engineering degree and a MBA, both from Arizona State University. As far as professional experience, I've got over 30 years of experience in the industry. With APS I have been in transmission distribution, as well as resource management, which includes resource planning and resource acquisition.

Q. Can you go into a little more depth in terms of your role and your responsibility as the vice president of resource management and maybe, you know, if there is such a thing talk about what keeps you up at night?

A. (MR. COLE) Sure.

So as the vice president of resource management, my responsibilities include planning for future generation resources, and just to be clear, that means power plants of all types, it includes the acquisition of those resources, it includes the operation of those resources, including acquisition of the fuels, if required, for those resources, and having those resources participate in western markets at whatever level we determine appropriate for our customers.

The other thing that I want to add here is, you know, the -- you mentioned the what keeps me up at night, and I'll just kind of explain a little bit about what all this means. Electricity today is much different than it was 20, even 30 years ago, and the amount that all of us depend on electricity is pretty amazing, actually, because it's not just the air-conditioning so that we're not fanning ourselves, it's not just the lights to allow us to see, but it's everything from our communications via cell phone, it is the ability to get water to us, it is gasoline or electricity to charge our cars, depending on what you have.

So it's -- it's every aspect of life now. And I think the criticality of that is never more apparent than it is today. And as I think about that, the responsibility that my -- that I have and that my team has and that APS has to make sure, as Mr. Derstine mentioned, that we can serve our customers at all hours of the day, at all times is a really daunting task, but it's really critical.

And so I don't know if it keeps me up at night, but it definitely makes me think a lot about ways to do that in a reliable and affordable way for our customers and really that's what we're here to talk about today, because Redhawk is part of that picture.

Q. Thank you for that.

I think you have a slide that's going to -- you've summarized the topics you've planned to cover for the Committee. Do you want to take us through that, please?

A. (MR. COLE) So I'll start by touching a little bit on the history and service territory at APS and Mr. Derstine mentioned a little bit of that. I'll talk about the generation mix that we have now, that we had in the past, and where we're going in the future. I'll talk about what our APS planning foundation is when we think about how do we think forward on what we're going to do in the future. I'll talk about our Integrated Resource Plan and give you a few takeaways from the most recent plan we filed in November of 2023.

I'll talk about planning for reliability, which is again, a very critical component of all of this, and then I'll close with discussing a little bit about resource adequacy and natural gas, specifically, and how that fits in.

Q. You're going to start us off with a little APS 101, discussion about APS and its history and service territory?

A. (MR. COLE) Yeah. So it was mentioned, we are -- APS is Arizona's longest-serving utility. We've been

around since 1886, as you can see on the screen. We've got a very large service territory. We serve almost 35,000 square miles. We serve in 11 of Arizona's 15 counties. We've got nearly 1.4 million customers, the vast majority of them residential. And our peak demand, which to give you the first of many kind of definitions, is the most amount of electricity at one particular point in time that we need to serve our customers. That peak demand is around 8,200 megawatts. I will note that we reached that point, which was just shy of 8,200 megawatts. We broke our record that was prior 13 different times last year, so -- by about 500 megawatts, which is around 6 percent. And when you think about that, the project we're here to talk about today is a little under 400 megawatts. So we broke our record last year by a larger amount than what we're here to talk about today, just to put things in context. We did break our record again this year, only once so far. We'll see what the rest of the summer brings, but that's sort of the history and service territory and where our peak load is.

Mr. Derstine mentioned that APS is a public service corporation. I think that's a really important point -- part of this discussion. We've got very broad service obligations, that includes significant planning

responsibilities, one of those being what we talked about earlier and what I talked about earlier, which is the planning for generation resources or power plants. We have an obligation to serve our customers, and that obligation is to serve them in a reliable and an affordable way, and so that's what we're here to talk about today, as Redhawk is part of that equation.

Q. Next area you wanted to talk about was the resource mix that is the combination of resources that APS uses to serve its customers, both a little bit about the past and how you see that resource mix changing as you move forward into the future.

A. (MR. COLE) So to start out here, I'll talk a little bit about where we're at today. And today, as you can see on the left-hand screen, we've got a diverse mix of resources made up of nuclear, coal, natural gas, wind, geothermal, biomass, solar batteries, microgrids, and customer sited resources, like energy efficiency, demand response, and rooftop solar.

That diverse conversation will be repeated. That is a very important component of our discussion today. But I also want to point out, if you look at the right screen -- and I'm just going to test this out to see if I can actually use it. There we go. There we go.

Okay. You can see that in 2005 the amount of

clean energy that we served our customers with was about 24 percent. And as of last year or our last full year of operation, we actually were serving our customers with 50 -- 51 percent clean energy. So a pretty significant change over that period of time. You know, I think, importantly, when we look to the future, I'll go ahead to the next -- next slide here, and talk a little bit about what we're doing now, and how we're moving into the future.

We're investing thousands of megawatts -- in thousands of megawatts in diverse generation resources. Much of what we're doing in the near term is related to solar, wind, lithium ion batteries, natural gas, and customer sited resources. I specifically called that out because over a long duration of time there will be other resources that we'll need to include in that mix, but today that's what we're doing in the short term in order to maintain our reliability.

MEMBER LITTLE: Mr. Chairman?

CHMN STAFFORD: Yes, Member Little.

MEMBER LITTLE: May I ask whether the -- when you talk about clean energy, does -- is nuclear included in that category?

MR. COLE: Committee Member Little, the answer is, yes.

MEMBER LITTLE: Thank you.

MEMBER GOLD: Mr. Chairman?

CHMN STAFFORD: Yes, Member Gold.

MEMBER GOLD: A question for Mr. Cole, since you brought up many things that I'm interested in, which I won't touch on now. The definition of clean energy, solar panels don't emit anything, but in order to get the solar panels, you're destroying the planet, but that's still called clean energy, correct? Same thing with wind turbines. And the worst part is the place we get our solar panels from is the most polluting country in the world. So by buying solar panels from China, they are polluting the hell out of the atmosphere. So where did the word "clean energy" come from and what does it really mean?

MR. COLE: Committee Member Gold, when we refer to "clean energy," it's really defined as what the carbon emission out of a type of resource is at that time. So it does not look at sort of the creation of, history of, where it came from, but only what the emissions of that are. So in the "clean" vernacular in our industry, solar, wind, nuclear, demand response on the customer side, things that don't emit carbon when they generate electricity are considered clean.

MEMBER GOLD: So what it really means is

clean emissions energy?

MR. COLE: Committee Member Gold, that is correct.

MEMBER GOLD: Thank you.

MEMBER DRAGO: Mr. Chairman?

CHMN STAFFORD: Yes, Member Drago.

MEMBER DRAGO: Yeah, hi, Mr. Cole. I'm curious, what -- what is microgrid, because it's along all these renewable energies, what is that?

MR. COLE: Committee Member Drago, the microgrid is not a clean energy component. Microgrids are either diesel or natural gas-based and so they do emit carbon.

MEMBER DRAGO: Thank you.

CHMN STAFFORD: The microgrid serves more as a function to, what is it kind of a backup reliability, and something that could be insulated from larger grid failure, is that the primary benefit of a microgrid?

MR. COLE: Chairman Stafford, in most cases, microgrids are used as backups. In some cases that backup can be shared and APS can use it as a resource when needed, but generally, yes.

CHMN STAFFORD: Thank you.

MEMBER GOLD: Mr. Chairman?

CHMN STAFFORD: Yes, Member Gold.

MEMBER GOLD: Again, Mr. Cole, I'm not familiar with the term "microgrid." What is that actually composed of? And let me add more, and how much energy can it produce? And how much of a backup is it really good at?

MR. COLE: Committee Member Gold, the microgrids are typically made up of very small engines, many times diesel-based, and for example, if you -- if you had a hospital that needed two megawatts of electricity to run, and they want to make sure that if there is a power outage, for whatever reason, they're able to put -- it may be 10 different engines that are outside of their building that will automatically kick on in order to keep the power on at the hospital.

And so those are the type of applications that you'll see a microgrid in. It's emergency backup, in many cases, but it can also be used for expanding and kind of enveloping a footprint of loads that are critical to stay on.

MEMBER GOLD: Mr. Cole, question, other than hospitals, Arizona's water is pumped from underground, usually a thousand feet, vacuum pumps, hand pumps will do 32 feet. So if you have electricity outages, the people in the state of Arizona, whom I

represent, need drinking water. Do our water-producing facilities have these microgrids?

MR. COLE: Committee Member Gold, I'm not aware of whether they do or not. The areas where I know that they exist are places like hospitals, data centers, some military facilities. Some of those places are the ones I'm aware of. That doesn't mean that there aren't other emergency backups out there, I'm just not aware of them.

MEMBER GOLD: Thank you.

MR. COLE: So if I may kind of continue on this -- on this thought. I did want to kind of finish with the future of where we're going. And in our case, APS has a clean energy commitment, which is effectively a goal for us, and in that, we are planning and working toward 2030 being 65 percent clean, with 45 percent of that generation portfolio coming from renewables, and then by 2050 our goal is to achieve 100 percent clean energy.

Now, I will say those are lofty goals, especially to 2050. We were very clear when we made the 2050 statement that technology will have to advance. And we know that. We wanted to talk about our goal out loud purposely, because we want the industry to evolve some of those potential resources so that we can get there.

Today we don't have a clear line of sight though of how we get to 2050.

I will point out that the units we're talking about today and it was mentioned earlier by Mr. Derstine are at least capable of being able to burn hydrogen in the future. The idea there being if that technology of producing a green hydrogen from renewable energy can be pushed forward, distribution of that moved forward, and that become cost-effective for our customers, it would at least give us that option with these units. And so, again, wanted to kind of give you a sense of where we are, where we've been, and where we're going.

MEMBER GOLD: Mr. Chairman?

CHMN STAFFORD: Yes, Member Gold.

MEMBER GOLD: Again, for Mr. Cole, APS has solar generation plants as part of the system, correct, which you own?

MR. COLE: Committee Member Gold, that is correct.

MEMBER GOLD: And the byproduct of the solar generation plants is excess electricity when it's not being used, which they can store either as lithium batteries or they can convert through electrolysis to hydrogen; is that correct?

MR. COLE: Committee Member Gold, those are potential uses for solar. In some cases all the solar energy that's being produced is utilized in order to serve customers. Other times, when there's not as much demand on the system, there could be excess that could be put into batteries and also, as you point out, could be -- could be used -- I lost my train of thought.

MEMBER GOLD: Could be used to produce hydrogen at no cost.

MR. COLE: Thank you. If that became a good option in the future, yes, that's a true statement.

MEMBER GOLD: Now, hydrogen, when it burns, combines with oxygen and produces water, which everybody loves, especially those of us that live here in the desert; however, there's a lot of nitrogen in the air, and I don't think -- I'm not familiar with studies that are shown that hydrogen is any better than natural gas in producing noxious emissions.

AUDIOVISUAL TECHNICIAN: Mr. Chairman, can I hold for one moment? We're having an issue with Zoom.

CHMN STAFFORD: Yeah I was just going to ask about that, because I -- both my tablets here are on the fritz. I'm not getting any signal.

Let's go off the record.

(Recessed from 1:57 p.m. until 2:26 p.m.)

CHMN STAFFORD: Let's go back on the record. We had technical difficulties there, but we are back on now.

Mr. Derstine, please continue with your direct of the first panel, I believe Mr. Cole was talking about the future generation resource mix, when we -- we lost transmission.

MR. DERSTINE: That's right.

Q. Do you want to maybe take a few steps back before we have go forward and just kind of, I guess, cover that what you indicated in terms of the transition as APS moves forward and the future resource mix?

A. (MR. COLE) Sure.

So kind of going back to the where are we going. APS has a clean energy commitment. And as shown on the left slide, we plan to be 65 percent clean and 45 percent generation coming from renewables in 2030. And we also are moving toward 100 percent clean by 2050. I think I mentioned that, you know, that path is not an easy one, in fact, many of the technologies that we'll probably need in order to get to that 100 percent may not be here or exist today. And so we'll continue to message to the communities that we are looking for those ideas, those options and those alternatives in order to get there. But we do not have a clear line of sight of how we get

there today. But that is our goal to get there.

CHMN STAFFORD: Member Fontes, you have a question?

MEMBER FONTES: Thank you, Mr. Chairman.

Hello, Brian, it's -- it is, in fact, me. I have a clarification, just for the record here. Clean energy, so that is renewable energy mix with nuclear, is that how APS is defining it just so we're consistent, and then renewable would be solar, wind, biomass, bio-gas geothermal, and hydro?

MR. COLE: Committee Member Fontes, yes, clean, I believe, makes -- makes up -- is made up of all of the areas that you mentioned, which is renewables, which is nuclear. It is also customer sited resources, like energy efficiency, demand response. So things that do not emit carbon that we utilize in order to meet our customers' needs, those are considered clean. And then the renewables, yes, there's a large list of them, but from our current portfolio, wind, solar, bio- -- biomass, geothermal, wind -- did I say wind -- yes, I think you had them all.

MEMBER FONTES: Hydro, yeah. So we're just basically, in a high level we're adding nuclear when we say "clean" on top of, plus the energy efficiency and the customer sited.

MR. COLE: Yeah.

MEMBER FONTES: Thanks, Brian. I appreciate that for the record.

Thank you, Mr. Chairman.

CHMN STAFFORD: Thank you.

BY MR. DERSTINE:

Q. So, Mr. Cole, you talked about the -- how the energy mix has transitioned and changed and how it will change as -- as you go forward. Are there some basic, you know, principles or considerations that you as the vice president of resource management take into account when you're looking to plan for new resources that will help APS achieve its goals?

A. (MR. COLE) Yes. So when we at APS talk about our planning foundation, it's made up of a few things, and those are listed out on the left screen. Reliability is job one. That really is the most important thing for us, we've got to make sure, as we talked about, the importance of electricity to society today, so reliability in making sure that we can supply that energy in all hours, in all days is critical. And so that reliability is first and foremost what we have to do.

Right behind it, though, is it needs to be -- the cost needs to be considered, right, it needs to be affordable for our customers. Our customers need to be

able to pay for those services and that electricity in order to get those critical services and tools. And so cost is a very important component for us as well. Clean energy integration, we've kind of already talked about that. Talked about our goal of clean energy. Those are all things that need to mesh together. But clean energy moving forward there cannot happen without it being both reliable and cost-effective. And so those are always going to have to be part of the equation in order to move forward in our clean energy environment. And then, lastly, and I mentioned the word earlier and you'll hear it again, but generation resource diversity is really a critical component, and frankly, is the foundation of how we serve our APS customers.

In order to make sure that we've got all of the different components that fill all of the hours of the day with the electricity that our customers need in a reliable way requires significant resource diversity. And I'll walk-through a couple of examples of that here very shortly as well.

Q. Okay. Yeah. You've covered the planning foundation or the principles that you and your team use in making resource decisions. Beyond these kind of general concepts of planning principles, is there a formalized process that APS uses to identify the

resources that it will need in order to meet future demand?

A. (MR. COLE) There is a process that identifies that. And we considered a road map for our resources, and that's the Integrated Resource Plan or sometimes referred to as the IRP. The last Integrated Resource Plan we filed was in November of 2023. We're required by the Commission to file an Integrated Resource Plan every three years.

That Integrated Resource Plan provides a 15-year outlook of energy demand from our customers, in other words, a forecast. And it also includes a generalization of what the resource investment needs to be in order to meet than projected demand. You know, forecasting 15 years forward, never an easy task. So you're never going to be completely right, and so that's why we file it every three years, and so we readjust and we continue to evolve as we move forward.

But we file that at the Commission, it provides an opportunity for stakeholders to engage with us and with the Commission to give us feedback on what our plans are, and in fact, we have what's called the Resource Planning Advisory Council, or RPAC, that is engaged with us throughout the process. And we meet with them on a regular basis. We share with them assumptions. We share

with them scenarios and, in fact, we even share some of our modeling data and software with them, in case they want to run some of their own cases.

And so we -- we get a lot of feedback in those meetings, a lot of things for us to think about, things for us to consider when we are putting our Integrated Resource Plan together. Ultimately, that plan comes out with a road map of what the future of resources looks like for the next 15 years. I think, importantly -- well, I'll save that for a minute, but I did want to make sure that it's clear that, you know, we do a lot of work there, Mike's going to talk about the specifics of the Integrated Resource Plan. He's going to talk about the modeling and some of the more details in that space.

Q. Looking at your -- your slides, slide 27 of APS-11, it says, "The IRP provides a 15-year outlook on energy demand of APS customers and resource investments needed to meet projected energy demand."

Do you want to talk about maybe some of the key takeaways from -- from that outlook and what the IRP has told you?

A. (MR. COLE) Yes, so in that -- in that 2023 Integrated Resource Plan that we filed at the Commission, there were a few very important takeaways. I think if I were to characterize them, they'd shown on the screen on

the left, and that is that nuclear is the foundation of our clean energy. And the foundation of our energy supply for our customers. It's a baseload resource, operates 24/7 very cost-effectively for our customers. Renewables are a very good low-cost energy producer, and so renewables are very important for our portfolio. They produce low-cost energy. We're able to use that energy to serve our customers during the time when those renewables are producing. And in times when they're producing where we don't need it for our customers leads us to the third line, which is batteries for peak use and storage of energy.

And this was mentioned earlier by the Committee itself, that sometimes when you've got excess being produced, you can store that energy in the form of batteries and use it at another time. And so those are very important, and that's part of the takeaway of our IRP. The other component of that is the movement toward exiting coal ownership. That is part of our Integrated Resource Plan going forward.

And then, lastly, and very important for what we're here talking about today is the inclusion of natural gas to balance and adjust to maintain both reliability and affordability, as we continue toward our clean energy future.

And so, importantly also to note that in the Integrated Resource Plan, it will come up with a sort of grouping of different types of resources that we expect to see over the next 15 years. That is never going to be exact. And, in fact, what we actually end of procuring, building, buying ends up being done through our All-Source RFP, request for proposal, which is the process we use to acquire resources, which Mr. Eugenis will be talking about when he goes next.

And so, importantly, the very -- the amounts will vary somewhat from the IRP, but they should be directionally very close to the groupings and the amounts that are within the IRP.

Q. I think you have -- the next slide you're going to talk about some of the APS resource and energy mix that I assume comes out of that IRP plan, and looking out into the future?

A. (MR. COLE) Yeah. So to start out, I'll direct you to the right-hand screen, and there is quite a bit of information and numbers and colors and everything else, so I'll try to orient you to the slide as best I can.

Back to the -- there it is. Okay.

On the left-hand side, you'll see the installed capacity in megawatts, so this is effectively the nameplate capacity of all the resources that we have.

That is the most that it can generate if it is able to generate. On the lower part of that graphic, you'll see that we looked at four different time periods. We looked at present day or 2024, we looked at 2027, we looked at 2032, which is after Four Corners -- after we exit Four Corners, and then the end of the planning horizon in the IRP, which is 2038.

Those dates are the same on the right hand. And on the right hand, what it is showing is what the share of energy mix is for each type of resource, which are listed next to the graphic. Importantly, this kind of introduces a couple of different terms as well, which is "capacity" and "energy." And so I want to make sure that I give a high-level definition of what those are just to make sure we're all on the same page.

And so when you talk about capacity, again, that is sort of what is the most that a type of resource can produce at any given time? In solar, for example, when the sun is shining and it's in the middle of the day, 12:00 to 1:00, it will be able to produce its maximum capacity, other times of the day it won't. Natural gas, if it's a 100-megawatt plant, for example, you can turn it on and off when you want to and you can use that 100 megawatts whenever you need to.

That's the capacity. The most amount that

you're going to use. And so your nameplate capacity will look different than what your actual energy use is, because some resources and assets are going to be used to produce energy during the middle of the day, some during the night, some 24/7, around the clock.

And so what I'm trying to point out on this graphic is in the portion on the left, what you're going to see is here's all the nameplate capacity that we're installing over these time periods and what the takeaway here is, is we are significantly growing the amount of solar, the amount of wind, the amount of distributed energy, demand response, all of those being clean resources, right, they're either customer sited or they're renewables. And those are the types of things we're growing.

In fact, you'll see that coal disappears here, natural gas grows slightly. Okay, so again, what we're here to talk about today is natural gas. So we'll maintain and slightly grow the amount of natural gas in our system, but the main thing that we're growing as far as how much are we installing is in the solar, wind, and the other clean areas, right? On the right-hand side, if you look over here, this is how much energy is being produced within a year by those resources, okay?

Now, note that batteries is not represented,

because batteries don't produce energy, right, they store energy, they don't produce it. But the energy that's produced by the renewables, which is the biggest growth position within the portfolio, so again, I mentioned low-cost renewable energy, we'll continue to procure that, we'll continue to use that to provide energy to the system. It will either be used for our customers or we'll store it as best we can via batteries and potentially in the future some other ways to use it as well.

And so important to note that we grow to, in the low 40s as far as percentages in renewables, we'll continue to use natural gas in a very similar manner as far as energy goes. So the amount of energy, for example, that Redhawk, this project that we're here to talk about today, will produce is, in the big scheme of things, a relatively small amount. And, in fact, we expect the Redhawk facility to operate at a capacity factor, or what percentage of the time is it going to actually operate and produce energy, less than 20 percent of the time.

And so that's really the takeaway that I wanted you to have here is to see how the portfolio grows, to see the growth in the renewable energy, but that the reliability component needs natural gas in order to

maintain.

CHMN STAFFORD: Quick question. If you look at the right half of the slide, you have nuclear decreasing as a percentage of the overall energy, that's because -- that's not because you're getting any less nuclear energy, it's because it's -- because the overall amount is growing, and it's remaining constant, and it becomes a small percentage of the mix, correct?

MR. COLE: Chairman Stafford, that's exactly correct.

CHMN STAFFORD: Okay.

MEMBER FONTES: Mr. Chairman, question.

CHMN STAFFORD: Yes, Member Fontes.

MEMBER FONTES: I'd like to know, and maybe it's not here, Brian, but elsewhere in your testimony, either today or tomorrow, how this helps or if it even relates to EM and EIM with respect to the California Independent Systems Operator. Second is the transmission paths. As you're aware of, my background is transmission, so I'm always curious how the path with these peaker plants are going to work in a little more granular detail. Understanding that we on this Committee focus on the interconnect or the POI, but I also like to know how that's going to operate on the grid there with respect to this, because we have to opine on the systems

reliability.

Lastly, just to add a note, some of my colleagues here aren't as well versed on what Four Corners and certain services are, so I might just give you a tip to explain that a little bit as it relates to power plants and coal, Brian.

Thank you, Mr. Chairman.

CHMN STAFFORD: Thank you, Member Fontes.

MR. COLE: Do you want me to go ahead and address as much as I can?

CHMN STAFFORD: Yes. And some of -- some of the answer that may be it's going to be addressed in somebody else's testimony later on, so if that's -- that's your answer, that's acceptable too.

MR. COLE: Well, I will answer Committee Member Fontes. I think, importantly, you know, all of our -- our goal is all of our assets and resources to be able to be utilized in whatever markets we are participating in. So today that's the Energy Imbalance Market within the California ISO, and tomorrow it could be a day-ahead market of some type or form. Our goal would be to be able to utilize all of our resources in that, because that -- that's the way we can use them most efficiently.

I think the other pieces are probably best

left for later. We've got more technical experts to talk about some of those details.

CHMN STAFFORD: Thank you.

MEMBER FONTES: Perfect. I appreciate that.

BY MR. DERSTINE:

Q. Mr. Cole, in my opening I indicated that APS faces a number of challenges in terms of planning for the future and planning to meet demand. Do you want to talk a bit about some of those challenges?

A. (MR. COLE) Yeah.

So there are no shortage of challenges in order to meet our customers' needs. I think if you look at the graphic on the right-hand side, it indicates our total, again, recall peak demand, so the most that our customers use at any particular point in time. That continues to grow. We've got significant customer growth within the state of Arizona. We are -- we are setting somewhere around 30,000 meters this year, which means we have 30,000 more customers coming this year. That's not unlike what it's been the last couple of years. We expect that continue. People want to be here. People want to move here. And so we've got a lot of growth. We've got industrial businesses and other things as well. So it's residential, it's commercial, it's industrial.

You've got electric vehicle adoption that's occurring, that also increases your demand on your system, so that's happening. Plus, on top of that, we've got extreme weather and high temperatures that's been occurring, and last year was -- was a great example, July being the hottest July on record and, in fact, hitting over 110 degrees an awful lot of days, actually all but one, in that space. And so a lot of things that aren't -- aren't and wouldn't be seen in a 10-year average forecast that we're having to make sure we're planning for. So peak demand forecast continues to grow for all those reasons.

At the same time, we are exiting some of our older coal units, right, and so Mr. Derstine had mentioned a thousand megawatts, it's actually a little bit more than that, it's actually around 1,350 megawatts, and so it's a pretty big number. Again, that's -- that's more than three times the size of what we're talking about here today that we're retiring that are -- that we are exiting as far as coal goes.

On top of that, we also have contracts that we sign, so APS does not own all of the generation that we serve our customers with, some of it we lease. And we sign what's called a Power Purchase Agreement, and some of those agreements roll off during that time frame,

which means they expire, and we'll have to go fulfill those as well. So we'll have to do something either with them, or some other way to fill those gaps.

And what you can see on this chart is the growing delta of what we need to go out and get in order to serve that peak capacity. And by the end of that planning horizon, you're talking about 5,000 megawatts of peak capacity. Now, remember, that's not nameplate capacity, that's peak capacity, so what can be produced when the customer needs it at the most.

So those are very significant. And I think, you know, that kind of lays out some of the challenges that we're facing. You know, I mentioned renewables are a great low-cost energy resource, but they also produce when they produce. And so solar's great during the day when the sun's shining. Wind is great when the wind is blowing. But those don't always happen, right, there's intermittency there. So we've got to find ways to plan around that. And I think the important thing to note is that doesn't make them bad resources, it just means we need a diverse portfolio to be able to serve all of the hours for all of the situations.

CHMN STAFFORD: I have a question about the expiring Power Purchase Agreements. Some of those I assume can be renewed. Do you have the existing contract

holder bid into a RFP to determine whether or not you're going to renew that contract or seek the energy from someplace else?

MR. COLE: Chairman Stafford, the answer is yes, we do. We procure, with the exception of short-term procurement, we procure all of our longer-term resources through our All-Source RFP, and so if there is contracts expiring, which there are, then we would reach out to them and encourage them to bid into our All-Source RFP, so that they can then compete with all the other resources that we might be able to get on behalf of our customers, so that we can create the most reliable, lowest-cost portfolio.

CHMN STAFFORD: And these expiring contracts, are they all gas, are some of them other -- are some of them renewable, are some of them -- what's the nature of all of those contracts?

MR. COLE: Chairman Stafford, so there's a mix. And, in fact, you know, it was mentioned earlier, you know, kind of going back to 2020, in the early 2020 -- sorry, not 2020s -- in the early 2000s, there were a lot of gas units and other types of units that were built around the Southwest. And, in fact, ended up a little bit overbuilt, as far as the market goes. And so we, and many others, have been able to take advantage

of that for a great period of time. That has now disappeared. There is no excess. And, in fact, we'll talk a little bit more about resource adequacy and reliability later. But those resources have all been bought or they've been leased. And so there are no power plants sitting around just waiting to operate anymore.

And so some of those are gas, getting to your question -- I apologize for taking a while to get there -- some of them are gas, some of them are renewables, because we started signing renewable contracts about that time as well. And so some of those contracts are starting to expire as well. So we'll continue to have that, because we lease a lot of our power plants. That will be a continuing issue that we'll have to deal with is as they roll off, and as they expire, we'll have to go replace them in some way, shape, or form.

CHMN STAFFORD: Is the Solana plant one of those expiring agreements?

MR. COLE: Chairman Stafford, I'm trying to recall when the Solana plant retire -- or, I'm sorry, expires. I believe that was a little bit longer-term agreement, so I think that one goes on for a little bit longer. I don't know if it's out in the later 2030s or not. We could find the answer to that and give that to

you, though.

CHMN STAFFORD: Great. That -- the short answer is it's not expiring before 2030?

MR. COLE: No, it is not.

CHMN STAFFORD: Okay. Yeah, I'd like to -- I'm curious as when that -- when that one's up.

MR. COLE: We'll find that out for you.

CHMN STAFFORD: Thank you.

MEMBER DRAGO: Mr. Chairman?

CHMN STAFFORD: Yes, Member Drago.

MEMBER DRAGO: Yeah, to carry on with the conversation about the purchase agreements, when you have an opportunity to purchase clean energy under those purchase agreements, does that help you contribute against your 2050 goal?

MR. COLE: Committee Member Drago, it does if the contract goes through 2050. And so it depends on the duration of the contract that we sign. Many of the renewable contracts, Solana being a bit of an exception, a lot of the renewable contracts are for a little bit shorter time than that, sometimes 20, sometimes 25 years. So we're kind of getting into the space where they're going to make it all the way through 2050.

In the meantime, we'll either be re-powering them and re-signing them through an

All-Source RFP or going on to another one, but they do count toward our clean energy.

MEMBER DRAGO: Okay. Good. Thank you.

BY MR. DERSTINE:

Q. Maybe this is a good time for you to take the Committee through how you and your team plan for reliability, and I think you have prepared several slides that kind of use a specific day and show the challenges in meeting just the energy demand just on a peak day, on a given peak day.

Do you want to take us through that?

A. (MR. COLE) Sure.

And I'll let the Committee members know there are quite a few here, so if there's something that you want to stop me on along the way, please feel free, but there's a series that I think will help explain and show you how we do our planning, what we're looking for, and how we fulfill those obligations even on a peak day. So let me walk through those, and let me know if you want me to stop anywhere.

So let me start with a little bit of a setting up the situation. I told you I was going to mention diversity a bunch of times, and I'm going to fulfill that promise. I think it's important to note that we very much value, know that a diverse portfolio is important to

us. It's important to our customers. And if you look at the graphic on the right, what you'll note there is what we're procuring in the, I call it very near term time frame, so 2024 to 2028. In our line of work you've got to plan a lot further ahead than that, but that's the stuff that's right in front of us, the stuff that we know we're doing.

And so note that a significant amount of solar, nameplate, energy storage, customer-based resources, wind, and then you'll see the natural gas and microgrid. So for the first four on there, those are all clean energy resources, right. Now, on energy storage, we can talk about that a lot. I'm assuming that most of the time we're going to be charging that with renewable energy. That may not be the case. We're going to -- we're going to charge it with whatever makes sense for our customers, right.

If there's low-cost power somewhere and it's not renewable, we're still going to charge them, we're still going to use them, but effectively what I'm really trying to get to on this slide is the amount of natural gas that we're procuring is a pretty small amount comparing -- comparing it to all of the resources that we're putting in. And so, again, to make sure that we have a reliable and cost effective portfolio, these Redhawk units are

part of that natural gas piece. That's really important for to us maintain that reliability and affordability for our customers.

When we think about planning, we have to think about a lot of different scenarios. There are things such as wind droughts, where the wind just doesn't blow. And there are examples in the Southwest Power Pool, who has very close to 40,000 megawatts of wind that at a point in time may generate less than a thousand megawatts. And so you have to make sure that you understand the probabilities of what that looks like, and that you can cover your situation, whatever that is, with those things.

Solar's another example. I can have a 110-degree day in Phoenix, but yet I have clouds, and so you may not have solar that's able to produce. Again, that doesn't make either one of them a bad resource. They are good resources. They provide us low-cost energy. But from a reliability standpoint, I have to make sure that I have the right diverse portfolio to balance all of those potentials and make sure that I can serve our customers in all hours of the day. And so that's a really critical component. Again, takeaway from this is just to make sure you see that the natural gas piece we're doing is a relatively small amount of the

overall procurement in the next five years.

So if I now go to an example, and I'm going to use, I mentioned the peak day from last year, not this year, this is from last year, of 862 megawatts, it occurred on July 15th, and I'll point out a couple of things, because I'm going to use this as a foundational slide for a couple of examples that I'll walk through. So you'll note that on the right0hand part shows the megawatt of peak capacity so you can follow through the hours of the day, morning to noon, and then through the evening all the way to midnight, and you can see that the amount of electricity our customers are using starts out at midnight still reducing from the heat from the night before, minimizes somewhere in the 6:00 to 7:00 a.m. range, and then starts ramping up again throughout the day. We hit our peak around 6:00 p.m., that's the way things are today. It moves from there, but that's generally where it's at. And that's where it was on this peak day.

CHMN STAFFORD: And that's the, what do you call it, the coincident peak, it's not the net peak?

MR. COLE: Chairman Stafford, that is the coincident peak that we're serving for all APS customers on our system, that's correct.

CHMN STAFFORD: And this is the -- is this

a net peak or is it the absolute peak?

MR. COLE: It's the amount of -- Chairman Stafford, it's the amount of energy that we are simultaneously needing to serve our customers with at any given point in time. So it's a hard one to answer, because there is rooftop solar on the system, right, there's other things going on, and that will come into play a little bit in my example that I'm going to walk through, I might -- I might ask to make sure that Mr. Eugenis covers that in a little bit more detail, because that -- it gets a little complicated in his testimony.

CHMN STAFFORD: Right. Because I -- if you're counting the power that people are consuming from solar or more -- or, you know, the rooftop solar, I think some -- I seem to recall a lot of times even the solar that's, you know, utility scale is they take that out and they go off the net peak from all the solar on the system, not just distribution, distribution side solar but --

MR. COLE: Chairman Stafford, the utility scale solar would be counted as part of that. It was a resource that is being used to serve the system. The difference between it and a rooftop solar, though, is, as you point out, is some of that energy being used from the

rooftop solar is serving the house that it's on. There may be some additional energy that is coming out of it at the time that's in excess of what they're using, but there may not be. And so there -- therein lies the difficulty of trying to measure how that all works. And so in this case I think it's best if we represent it as the coincident peak that we're serving of our customers.

CHMN STAFFORD: Right. And so that's actually -- so you're only counting the energy supplied to the DG customers, not whatever they're self-consuming, then?

MR. COLE: That's correct.

CHMN STAFFORD: That's what I was really trying to get to, it's more this is the peak of actually what you supplied, not what they're self supplying? Okay. Thank you.

MR. COLE: So again -- again, I want to make sure that we're laying this out, because I'm going to use this slide for quite a few different pieces, and so peak demand occurs here, and that's the way our customers need to use power. And that's when we need to supply it. So if I just use -- and in this case, we're going to use rooftop solar -- and so I've introduced another vertical axis here that shows this is the amount of solar that's coming from rooftop solar on this

particular day, okay? Note that these are not the same on each side.

So this is a thousand megawatts effectively, at the most, but a thousand megawatts on our system is down here. So we're basically expanding this so that it's easier to see, so don't try to put them together, because it won't work.

MEMBER LITTLE: Mr. Chairman?

CHMN STAFFORD: Yes, Member Little.

MEMBER LITTLE: Just to clarify, that is the rooftop solar that is being delivered to APS, not that which is being used by the house on which the solar is, correct?

MR. COLE: Committee Member Little, no, this is actually all that is being produced by those rooftop solar units. And because we have meters associated with all of them so that we can aggregate that after the fact, we know that's the case. Okay?

MEMBER LITTLE: Thank you.

CHMN STAFFORD: Wait. Say that one more time. It's the -- the solar peak represents -- is that total rooftop production?

MR. COLE: That's correct, Chairman.

CHMN STAFFORD: Okay.

MR. COLE: It's total rooftop production,

so I'm trying -- trying to take two things just as a comparison, just to show how they fit together.

CHMN STAFFORD: Okay. And so this -- and this production is -- it includes both energy created by the DG system and sent back to the grid, and DG energy created and consumed at the location?

MR. COLE: Chairman Stafford, that's correct.

CHMN STAFFORD: Okay. That's what you were trying to get to, Member Little, I think, right, I just want to make sure I got it?

MEMBER LITTLE: Correct.

MR. COLE: I'm doing a poor job of explaining, but you are correct, and thank you.

MEMBER LITTLE: You're doing a great job of explaining, it's just a complicated thing.

MR. COLE: Thank you.

CHMN STAFFORD: And my hearing's not what it used to be.

MEMBER GOLD: Mr. Chairman?

CHMN STAFFORD: Member Gold.

MEMBER GOLD: So now I'm a little confused. On your customer needs require diverse portfolio of generation resources, you show solar as 2,865 megawatts; am I reading that correctly? Why is it only a thousand

there?

CHMN STAFFORD: Because this one is just a -- this is a graph of the rooftop solar. The total solar includes the utility scale in the big solar fields, as well.

MEMBER GOLD: Oh, okay. In that case, let me add the next thing.

When I added up all of these numbers, or actually, when Member Mercer added up all these numbers we got over 10,000 megawatts. The peak that you referred to there was 8,200 megawatts. So if we have the capacity right now of 10,000, is this today's capacity or is this your proj- -- predicted capacity at some time in the future?

MR. COLE: Committee Member Gold, the reason that you're seeing 10,000 megawatts on this particular slide is because, again, that's nameplate capacity. And so that is the maximum capability that those resources could produce that, but you don't know when they might be able to produce that. And so you have to then take into account what's their peak capacity that they're going to produce when we have a peak need.

So, for example, solar, in the example that I'm going to walk you through will not give you 2,865 megawatts of production at peak, it will give you

much less.

And so that's how we have to walk through these, so there -- it's a little bit of apples and oranges, and I apologize, if you indulge me on the example, it might help a little bit.

MEMBER GOLD: Well, now that I understand what the charts say, it makes more sense, because the only one that can actually give you nameplate capacity is your gas-fired turbines.

CHMN STAFFORD: Not even that. They won't -- they won't hit nameplate capacity on July 15th.

MEMBER GOLD: The gas turbines won't hit nameplate capacity?

MR. COLE: Chairman, Committee Members, they will be derated by a slight amount, not a lot, but a slight amount. And he is absolutely right, they will not hit -- I think they're -- I think we're in here 396 or 397 megawatts, you may -- you may lose 6 or 8 megawatts off of that, because of the heat, because they can't perform at their optimum at 118 degrees.

MEMBER GOLD: Gotcha. Gotcha. Gotcha. But they're really the ones that are closest to what you have on the chart?

MR. COLE: Yes.

MEMBER GOLD: The nuclear would be the

closest?

MR. COLE: Sorry, Committee Member. And I will -- and I will also ask our technical experts to make sure they correct me done those derates to make sure I didn't give you a bad number.

Got that? Thank you.

Okay. So let me walk forward on this example, and see what else I can confuse people with. If I -- if I show you sort of what the coinciding output of these types of resources are, and again, I used rooftop solar as an example, just because it's easy to show. And, in this particular case, if you look now at, first of all, at 6:00 at night on the previous slide, you can see that the production, if I can get the right button, the production of the rooftop solar was down at around maybe 250, 300 megawatts, okay? So that's the peak capacity capability that it was actually producing on our peak day at 6:00.

Now, importantly, two hours later from our peak, our peak demand had only gone down a couple -- actually, it's less than 200 megawatts. No, sorry, a little more than that, a few hundred megawatts, but now we're at zero on solar, right? The sun's down. Solar panels can't produce if there's no sun. And so you still have a gap, that is 7,858 megawatts of the 8,162

that was our peak load.

So, clearly, solar, and specifically rooftop solar, help us during the day when the sun is shining, but I can't use them when the sun goes down. And so this is just a way to show how that works and really to call out the fact that I need to make sure that I have resources that can fill the rest of this gap, right. And, again, connecting it to Redhawk is a gas unit that I can turn on when I need it and it provides a reliable source of energy in this space.

So if I go through one more example, and in this one I'll show you a simplified version, and I say that purposely, because, again, there are complications that make it hard to kind of call out exactly how it was done, but a simplified version of what resources did we use to serve our peak load last year, right, and I think that's helpful.

Again, going to the same day, same slide you've seen, and sort of advancing forward. So, first of all, we talked about nuclear being a baseload resource, we expect it to operate 24/7, 365, unless it's got an outage. In this case it was operating fully and we had all the output.

This year, or last year I should say, we had our coal units that were still operating, they

provided another source of energy on that day. After that, we put on the renewables, and so this is the amount that the renewables were actually producing at that point throughout that day, so you can see how they contribute, and that's a meaningful contribution. That's not to say that it's small, and I'll explain that more when I get to showing you what the future looks like.

And then we talk about natural gas. So natural gas fills in all of the gaps that we needed in order to fill that -- a big part of that. Then I'll show you another piece that's -- we call it net sales and purchases. In this case, not everybody was as hot as us that was around us. So instead of operating our most expensive units, we are able to buy power from others and bring it to our customers and save a little bit of money over running our own units.

At the same time I needed to make sure I have those units because there are times, 2020 was a great example, there was a west-wide heat wave. At that point in time, there wasn't anybody selling any power, and so you either had it or you didn't. And California found that out; California went dark. And so, importantly, we could have served this load with our own resources, but we didn't need to because we were able to save a little bit of money.

Now, the reason for walking you through that was to really give you a look at what's the difference between today or last year and what things might look like in 2032. So if you look at now on the left-hand screen, that's the screen you were just looking at, so that's the 2023 peak load day, and generally how we served, with what resources.

If you look at the slide on the right, that's showing you a modeled version of what the peak day might look like in 2032, and what we would expect the resource stacking, is what we call this, to look like in 2032. What I'll point out is that you still have your base of nuclear, what you'll note is there's a significant growth of renewables here, okay? So they're supplying a lot more energy. I mentioned renewables are a low-cost form of energy. We're using it. So going forward we plan on using more of it.

You'll also note that I'm including energy storage. And the reason I'm doing that is energy storage, which we are installing a significant amount of, in fact, more than 3,000 megawatts of it over the next several years. That will then be able to, as was pointed out earlier, take some of that renewable energy during the hours when we don't need it as much, which is the lower part of the day, charge the battery, and then use

it.

And so you'll note that there's a use of battery here in the beginning and the end of the day, and those are our ramp periods. So solar causes significant ramp, as does our load, right? Our customers use electricity in a way that is similar. So our customers start ramping up their use when the sun starts coming up and they start ramping down their use when the sun goes down, although I will say at my house it's quite a few hours after the sun goes down before the amount of electricity I use goes down.

So this is showing what that looks like, and then you can see that also customer base -- based resources like energy efficiency, demand response, we expect that a big part of what we're doing. And then, again, importantly, it's hard to see the red, but down here in the maroon, that's the natural gas. And the reason for showing this is to show you that 10 years from now, or less than 10 years from now, we will still need a significant amount of natural gas generation to make sure we balance those ebbs and flows of what the other resources on our system can do.

And so, importantly, again, tying Redhawk to here's what we're doing now, here's what we're doing in the future, you can see that they continue to provide

a significant amount of our reliability needs. Okay?

MEMBER GOLD: Mr Chairman?

CHMN STAFFORD: Yes, Member Gold.

MEMBER GOLD: First of all, thank you, Mr. Cole, those graphs are excellent. But you did say something that confused me. On the 2023 graph, net sale purchase, you said if there were times when we couldn't buy the gas, we could have produced it.

What does that mean?

MR. COLE: Committee Member Gold, what I meant to say there, if I didn't do a very good job, was we are able to serve our customers with our own generation resources, okay? In a worst-case scenario that's our job. In situations where there is another utility who may be adjacent to us or may be a couple of hundred miles away where there is transmission to be able to bring power to us, if they're not as stressed as we are on that particular day, we may buy power from them if it's cheaper than running some of our own resources.

MEMBER GOLD: I understand, you clarified that. So that means we really have do have a little more capacity than we're using but sometimes it's cheaper to buy some energy to produce energy as you said earlier but we do have a little more capacity. When you say we "have a little moral capacity," what is our actual capacity?

Is it 8,000, 8200 megawatts? What's our actual capacity if you had to use only ours?

MR. COLE: Committee Member Gold, without going too far down some complicated conversations we're required and it is best practice to have a planning reserve margin. And so we have not only have enough resources to serve our peak load, but there's a percentage beyond that that we procure, buy and lease, in order to make sure that we can serve our customers in the -- in the event generation outages, could be transmission line outages, we could just see a hotter day than we expected. For all of those contingencies you have a planning reserve margin.

And so we plan to have more than we would just to serve load, because that would expect, if you just did enough to serve the load, you'd have to be perfect in everything you did, and nothing would ever be out. And if we planned that way, that would not be very reliable.

MEMBER GOLD: So for your planning, what percentage of plans do you, for planning purposes, say will not be online when needed, what percentage?

MR. COLE: Committee Member Gold, our planning reserve margin has traditionally been around 15 percent, which is an industry norm. In fact, I will

point out that our planning reserve margin during 2023 was 16 percent.

Sorry, I misspoke. Our 2023 planning reserve margin was 15 percent. We increased that for this summer to 16 percent, for a variety of reasons, including the fact that we've had temperature extremes that we have never seen before, trying to make sure that we have adequately planned, and there's -- again, there's industry norms, there's industry standards that we are adhering to. And so all of that is in the name of trying to maintain that level of reliability.

MEMBER GOLD: Thank you. One more question about reliability. There was just a report that I read this morning. There was an attack on a Florida solar plant by some terrorist who supported Hamas. And he did, I think the number was $800,000 worth of damage to the solar field, and the police found more bombs in his car.

Which is more reliable in case of a terrorist attack like that, solar, gas-fired, wind, which is the most secure type of plant that we have available to us today, including the --

MR. COLE: Committee Member Gold, I think I would struggle to answer that question as far as what their ability to withstand an attack is. I think the only area I would feel able to speak to, because I have

also worked at a nuclear plant, is I would feel much more certain about our ability to withstand attacks at a nuclear plant. The others I don't think I have the knowledge to be able to answer your question.

MEMBER GOLD: Thank you.

BY MR. DERSTINE:

Q. The slides that we have before the Committee right now, it's slide 57 and slide 58. Slide 57 shows the resource mix that was used on July 15, 2023, to meet peak. You've taken the Committee through that, and then your slide 58 shows the hypothetical resource mix that may be used by APS on a day in 2032.

I guess what I'm getting from both of these slides is that it -- the relative resource mix really comes down to resource adequacy. Whatever the relative mix of resources that APS is using at a given time, you have to have sufficient resources to meet peak and to meet customer demand throughout the day, is that -- is that kind of a fair statement? Do I have that right?

A. (MR. COLE) Mr. Derstine, that's correct.

Q. Okay. Can you talk a little bit about resource adequacy and maybe touch on what that means and then what are the risks to resource adequacy? I think we talked about some of the challenges that you're facing that maybe specifically the risk to resource adequacy is

identified maybe by some of the other planning organizations?

A. (MR. COLE) Sure.

So, you know, we've have touched on resource adequacy a little bit, and just to make sure we're -- we're speaking on the same terms, in order to be resource adequate, you've got to have enough energy to meet demand under a variety of conditions, okay? We've talked a lot about contingencies. We've talked a lot about reliability, in general. But that's what resource adequacy is. Resource adequacy, at the end of the day, is do I have enough and the right types of generation resources that I can adequately serve my customers under a variety of circumstances, under a variety of scenarios? It's not perfection. But it is very, very high-level reliability, which is what our customers expect, and frankly, what we need as a society.

And so what -- what you can see if you look at the quote over on the right, which is from the Western Electricity Coordinating Council, is that variability remains the greatest risk. And Mr. Derstine, I think, mentioned this in his opening. It's been in the last two assessments from WECC is what they call them.

But I do want to point out that variability is not just variability of solar and wind, right, it's not

just a resource variability. If you look at the rest of the quote it's large plan additions of variable resources, which are those, but it's also the retirements of additional baseload resources, which we've talked about, extreme weather events, which we've talked about.

So those are some of the drivers that they call out. And, in fact, APS's analysis and what we have seen and the work that was done by Mr. Eugenis and his team to do the IRP in 2023, says exactly the same thing, that in order to maintain that reliability through that variability, that you need to have a variety of resources and that natural gas is a component of that.

So I think, importantly here, this is a -- I mentioned earlier the market used to be, there was more out there, right, you could go out and you could buy things, that's not the case today. And, in fact, supply chain issues have limited utilities and others' abilities to build resources. They've delayed them. Sometimes they've had to cancel them. But the resources that are needed to maintain reliability is starting to be questioned. And you can see that in the WECC assessment. And so that was really what I wanted to point out there.

Q. So if I'm reading the first sentence there, "Variability remains the greatest risk to resource adequacy in the Western Interconnection," how do you

solve for that?

A. (MR. COLE) Again, I think, you know, the way to solve for that really is you go back to what we talked about earlier, what's the planning foundation? You make sure that you have a reliable cost affordable, cost-effective, and diverse portfolio. And the diverse portfolio is the piece that is really important. And again, natural gas is a component of that.

And, in fact, I would go forward here a slide and point out that under a NERC assessment, which is North American Electric Reliability Corporation, I always say "council," but it's corporation, they have identified as well that natural gas-fired generators are essential for meeting demand.

And, again, stating again, that is exactly what our studies and work found out is that in order to maintain that reliability and to be consistent in the service of our customers that we need natural gas resources. Tying it again, the Redhawk units we're talking about here today are part of that portfolio that we expect to use and need to use in order to serve our customers' reliably.

So without -- without reading quotes in this case, I think we've got to, just closing up, we've got to be able to meet our customers' demand in all

circumstances, and the need for reliable generation resources calls for the Redhawk units, gas units, generally, in this case, through an All-Source RFP process, the Redhawk units specifically.

And Mr. Eugenis will talk more about the specifics within the IRP and some specifics within the All-Source RFP to tie those together as well.

CHMN STAFFORD: Mr. Cole, did that WECC assessment, did they also address the need for more interstate transmission?

MR. COLE: Chairman Stafford, I'm trying to recall. Many of the reports that have been out, and I can't remember if that one specifically did or not, many of the reports have called for the need for additional transmission. And, in fact, we completely agree, that is another piece of we consider part of it, part of our resource plan is we need more transmission in order to bring some of those resources home. So I cannot remember specifically on the WECC study, but many studies have identified that.

CHMN STAFFORD: Right. I recall that -- I recall that they said -- somebody said that we need a lot more, you know, high-voltage interstate transmission lines to be able to connect the region better. But I couldn't recall if it was that specific WECC assessment

or if it was something else. I thought maybe you would know off the top of your head.

MR. COLE: I apologize, I can't remember.

CHMN STAFFORD: Thanks.

BY MR. DERSTINE:

Q. Mr. Cole, I think that brings us to the end of your planned testimony. I think you have one summary slide that -- but I think you've already covered those high points. But do you want to just touch on -- on that summary?

A. (MR. COLE) Yeah.

And it really is repeating, so I will be brief. But, you know, I think to close it out, Redhawk really is part of making sure that we have a reliable portfolio. It's part of a diverse set of resources. It's part of being reliable. It's part of being affordable for our customers. And all of those are the foundational pieces of how we plan and how we make sure that we can supply our customers.

The Redhawk units that we're talking about today and in the subsequent days are part of that portfolio, they're needed to serve our customers in a reliable way. And they'll help us, frankly, continue to move toward our cleaner energy mix by solving some of those ebbs and flows throughout the day and evenings that we need.

MR. DERSTINE: That concludes Mr. Cole's testimony. Is this a good time to give the court reporter a break, and maybe more importantly, me?

CHMN STAFFORD: You're reading my mind, Mr. Derstine. I think that's an excellent suggestion.

MEMBER LITTLE: Mr. Chairman?

CHMN STAFFORD: Yes, Member Little.

MEMBER LITTLE: Just a real quick note, would it be possible for the applicant to send the slides to Tod and have him send them to us, so I could refer back and forth to them on my computer?

MR. DERSTINE: Absolutely.

MEMBER LITTLE: Thank you very much.

CHMN STAFFORD: Thank you.

Let's take a 10- to 15-minute recess.

We stand in recess.

(Recessed from 3:27 p.m. until 3:54 p.m.)

CHMN STAFFORD: Let's go back on the record.

Mr. Derstine, I believe you were switching to your next witness on this panel, Mr. Eugenis.

MR. DERSTINE: That's -- that's correct, Mr. Chairman, although I think at the break Mr. Cole followed up on a couple open items and he's ready to address those. I think he has information on the Solana

PPA and he wanted to clarify his testimony on the derate for the natural gas units. And I think wanted to maybe correct the number of times that APS has hit its peak.

MR. COLE: Chairman, if I may, yeah, so a few -- a few clarifications, corrections. So the first one would be a correction. And as many times as I have talked about the fact that we broke our record last year 18 different times, for whatever reason I was told I said 13 today. And so I wanted to correct the record. It was 18.

I wanted to point out your question around the Solana expiration, that's 2043 is when that contract expires. And then, lastly, I gave a little bit of a guess on what the derate at high temperatures was for each of the units at Redhawk that we're talking about, and the derate is around 6 megawatts per unit. So I just wanted to clarify the record.

CHMN STAFFORD: And the nameplate capacity is, what, 48 1/2 per unit?

MR. VAN ALLEN: That's correct.

CHMN STAFFORD: Okay. Thank you.

MEMBER LITTLE: Mr. Chairman?

CHMN STAFFORD: Member Little.

MEMBER LITTLE: I'm sorry, I was writing and I didn't hear when Solana is due to expire.

MR. COLE: That's 2043.

MEMBER LITTLE: 2043.

Also, I would like to take a moment to thank the applicant for what I consider to be a really good tutorial on resource planning for the non-believer.

MR. COLE: Thank you.

BY MR. DERSTINE:

Q. All right. I think that concludes Mr. Cole's testimony, and Mr. Eugenis, we're going to transition to you. You're sworn, you're under oath. Why don't you backtrack just a little bit, and since we covered it a couple of hours ago introduce yourself to the Committee and give them a little bit of background on yourself with your education and your experience?

A. (MR. EUGENIS) Good afternoon. I just want to make sure that we can hear me okay on the microphone?

Q. That's a little -- you may want to pull it a little bit closer, but --

A. (MR. EUGENIS) How about now?

Q. Good for me. The court reporter can hear you.

A. (MR. EUGENIS) Very good.

My name is Michael Eugenis, I go by Mike Eugenis. I'm the director of resource planning here at APS. My background is pretty varied across the utility industry. I went to school here in Arizona. I've lived

in the Valley for over 20 years now. I have an electrical engineering degree from Arizona State University, as well as a master's in business administration from the Grand Canyon University, as well.

While working at APS, I've spent several years in our transmission and distribution engineering organization, and most recently, I've spent three years within resource planning in a varied number of roles.

Q. I'm going to have you maybe slow down just a little bit, Mr. Eugenis, for the court reporter.

So you are the director of resource planning. Mr. Cole is the vice president of resource management. Is Mr. Cole your boss?

A. (MR. EUGENIS) That's correct.

Q. So that will be a tough act to follow this afternoon, right?

A. (MR. EUGENIS) That's correct.

Q. Okay. I have no doubt you're up to the task.

I think you have a slide that's going to summarize the topics you're going to cover this afternoon?

A. (MR. EUGENIS) That's correct.

The purpose of my testimony here today is to spend some more time discussing our Integrated Resource Plan. Mr. Cole did a wonderful job of introducing the

2023 Integrated Resource Plan, and I'm going to go into a little bit more depth about what we modeled as a part of that, some of the results of that Integrated Resource Plan, and how that informs our need for the project that we're requesting a CEC for today.

After I talk about our Integrated Resource Plan more in depth, I'm also going to spend some time discussing our All-Source Request for Proposals. Most recently the 2023 All-Source Request for Proposal, or RFP, is how this project was bid in. And I'll talk about our evaluation methodology.

In general, whenever a project, kind of the lifecycle of a project for APS is, first you start with an IRP that identifies needs, and then once you have those needs identified that helps inform that All-Source RFP process, and then ultimately we contract with different generation resources from that RFP.

Q. Thank you for that.

So you indicated you're going to give the Committee some more detail and depth on the Integrated Resource Plan. I think one of the -- maybe the starting point for the Integrated Resource Plan is your load forecast. Do you want to start there in terms of discussing the elements of the resource plan?

A. (MR. EUGENIS) That's correct.

I'd like to spend just a couple of minutes refreshing the members of the Committee about what the IRP is. Brian covered this, or Mr. Cole, covered this in his testimony as well. An IRP is usually developed by utility every three years. Most recently we filed these with the ACC in 2020. And then in November of 2023.

It's a 15-year look into the future of what are the predicted load needs or the load growth that we're anticipating, as well as what resources are necessary to meet that growth into the future, and maintain reliable electric service for our customers.

The purpose of an IRP really is to identify those resources necessary, and it requires a lot of modeling work, it requires a lot of statistics and stochastics in its development. In my comments here today, I'm going to do my best to hopefully represent what is a really complicated and complex process that we do here at APS in terms that I hope are easily understandable and can shine light in terms of how we approach the difficult question of determining what the optimal resource mix is into the future and the role that this project plays in that mix.

At the heart of any IRP is the load forecast. The load forecast really defines what needs we're going to have into the future. Brian spoke extensively in his

testimony about how we have different resource types that -- that meet our needs, as well as the gap into the future that we see that's necessary to continue to provide reliable service for our customers. I want to highlight a couple of different things in terms of the load forecast that was developed for the 2023 Integrated Resource Plan.

If you look on the right-hand side slide in the graphic here on the left, you can see that this is a comparison between the load forecast used in the 2020 IRP and the load forecast that was used in the 2023 IRP. The 2020 IRP is represented by this orange color, with the 2023 IRP represented by the blue color. I want to call out that in today or if you look at 2024 and 2023 really as being the first overlapping year that these two plans exist, the load forecast is almost identical, which I think speaks to the quality of our load forecasting team and the tools that we use to identify what our customer needs are going to be into the future.

As you move forward, though, you can see that almost the entirety of this new load forecast is higher than what we had previously predicted in our 2020 IRP. This is being driven by robust growth throughout the state of Arizona and really from a number of different industries as well. And it speaks to the amounts of

demand that we anticipate into the future for generation resources, and the customer needs that we anticipate.

A few statistics to highlight here as well, we see that load growth increases by over 900 megawatts in 2035, if you compare the 2020 IRP load forecast to the 2023 IRP load forecast. And if you look at a more concentrated period over the next couple of years, which is between '24 and 2028, when this -- the Redhawk project is estimated to go in service, you can see that there's over 1,700 megawatts of peak demand increase between today and that time.

There's a tremendous need for resources going forward, and the purpose of an Integrated Resource Plan and the modeling that we do is to determine what is the best portfolio or group of resources to maintain reliability for our customers at the least cost.

Q. So that's the load forecast, and I think you mentioned some of the other key piece of the -- of the IRP is then utilizing the load forecast, the identification of the resources that are needed to meet that load. You want to cover that next?

A. (MR. EUGENIS) That's correct.

Brian, or Mr. Cole, did I think a very good job in his testimony talking about diversity as being a core concept in our resource planning efforts, and in the

study work that we've performed. The title of this slide I think calls that out as well, a diverse mix of resources is really what's necessary going forward to maintain reliability for our customers. How we developed this resource mix really kind of speaks to the core of what I'm responsible for at APS.

I told you that we use a number of different modeling tools in our work, and our work is very detailed and requires quite a bit of an analysis into the future. We use something called a long-term capacity expansion tool. This long-term capacity expansion tool looks 15 years out on an hourly basis, and we input our load forecast on that hourly granularity, and then we -- we solve for what resources are necessary to maintain reliability, using that tool.

That tool is an optimization product. And so what it seeks to do is for a reliability threshold or a particular metric for maintaining reliability into the future, it seeks to find a group of resources that maintains that metric at least cost. So as we run that tool, as we update the assumptions associated with it and the different scenarios that we like to look at, it's always optimizing for those two things, a reliability threshold and then a least-cost portfolio to meet that threshold.

What we found in the 2023 IRP for our preferred plan and the group of resources that it identified is a varied mix of resources that has quite a bit of renewable generation as a part of it. On the right-hand side screen I want to call out, these are the cumulative resource additions that are identified in the IRP from 2024 to 2031. You'll see that the vast majority of resources come in the form of solar, battery, wind, and distributed energy resources. All of the values that we've provided on this slide are in nameplate numbers, which corresponds to the information that Brian had provided in his slides, if you remembered the left-hand graphic that he spent some time discussing.

Only once we've finished our procurement of a prodigious amount of renewable resources do you see the incremental amount of natural gas that's a part of this portfolio. This natural gas represents about 1,500 megawatts of nameplate capacity, and the project we're talking about today is included in this overall need. It's important, just as Brian -- or as Mr. Cole said in his testimony, that different resources provide different value to the grid. Our solar resources are a valuable source of energy while the sun is shining, wind resources are a valuable source of energy whenever the wind is blowing. And we also utilize a tremendous amount of

lithium ion battery storage or other storage technologies into the future in moving that energy to higher value periods of the day.

CHMN STAFFORD: Member French, you have a question?

MEMBER FRENCH: Yes. Thank you.

We've seen a substantial increase in merchant generation, especially within the solar industry, can you explain to me how that's accounted for in your resource planning?

MR. EUGENIS: Member French, when APS goes out to request resources, we do so through a RFP, or Request for Proposal, process. There's a number of utility-scale developers that exist in the industry that develop those projects and offer them to us as a part of that process as bids into that RFP, and then ultimately, we evaluated those bids to see if they're a part of that least-cost portfolio.

MEMBER FRENCH: Yes. Thank you.

One of the issues that we've seen come up that Member Little likes to point out on a regular basis is that these generators tend to hold off on filing a Ten-Year Plan until a year or two from when they intend to construct, and your resource planning is, I believe I saw every three years, so does that have any impact on

how you plan or do you wait until a RFP is out to really assess these other generators?

MR. EUGENIS: Member French, our planning is focused on the -- our customer needs, so as a load-serving entity, APS has an obligation to maintain resources for our customers. We do not necessarily monitor the resource plans that are submitted by developers or by other entities that do not serve load, and instead, rely on that RFP process to signal to those entities, and through the IRP, frankly, that we have considerable needs into the future, and that we welcome them to develop projects within our service territory if they can do so at least cost for our customers.

Does that answer your question, sir?

MEMBER FRENCH: Yes, it does. Thank you.

CHMN STAFFORD: Please proceed.

MR. EUGENIS: Thank you, Chairman.

When developing this portfolio, I talked about the different resources that make up that diverse generation mix. Each of them a part of a least-cost portfolio. When we do our modeling in that long-term capacity expansion tool, we take into account all of the different characteristics for these resources, which means that the tool understands the fact that solar resources are only available during the day and that wind

resources are only available when the wind blows, and that other resource types, especially natural gas, provide flexibility and dispatchability to the system.

I also want to call out as a part of this portfolio, there is a tremendous amount of investment that takes place in battery energy storage as a part of this portfolio, and yet, natural gas resources are also still an important part of our procurement going forward.

BY MR. DERSTINE:

Q. I think, Mr. Eugenis, you and Mr. Cole have spoken to the diverse mix of generation resources that APS is relying upon out through your planning horizon into the future. I think you have a chart that, you know, Mr. Cole took us through kind of that day last year in July which is kind of explained the peak and how the -- how the different resources were able to fill in and meet that peak demand in July of last year.

You want to -- you want to talk a little bit about -- or do you have an example that you would like to use for the Committee kind of showing how flexibility of natural gas is part of that diverse resource mix?

A. (MR. EUGENIS) Absolutely. Thank you, Mr. Derstine.

Natural gas is a multipurpose tool, I think it's a resource that has a lot of different value streams that

it brings with it, and it's something that really can do or can be used in a way that very few other resources have the same ability to be used. I used two terms in my -- on the previous slide that I'd like to define for a moment now, which is dispatchability and flexibility. And I used this slide to highlight those two different characteristics of a generator, a dispatchable generator is one that we have the ability at APS to control. So that means at any time we can call upon that generator to give us a delivered megawatts on behalf of our customers and maintain reliability for them.

A flexible generator is one that can vary in realtime or it can respond to system events very quickly. So an example of a dispatchable generator that may not necessarily be as flexible is a nuclear facility. Our nuclear facilities we turn on and we run them full out, and they produce a large amount of affordable energy for our customers; however, we typically do not vary the output of a nuclear facility.

Other facilities, such as our coal plants, have some element of flexibility to them as well, but not to the same extent as the type of generation that we're talking about today, which is a natural gas combustion turbine.

The chart that I have on the slide here, shows a

typical load profile during what we call a shoulder month or in the spring, this is for April in 2028. If you were to follow the top line here, regardless of color, you would see this is what we estimate the demand from our customers to be during this period. And so this overall or total is the amount of demand that we have to satisfy with all resource types in order to maintain reliability.

Now, I've superimposed on this image this yellow portion, which is representative of the solar output. And I realize that I've complicated things between Mr. Cole's testimony, which showed solar kind of on the bottom, and I'm showing it as subtracted from the load, and I hope that you can bear with me for a moment as I explain this.

By showing the solar generation as kind of subtracted from the load, I'm identifying the need for other resources to fill that load gap whenever it's not available. So if you look at this blue region, this blue region is representative of the total demand or total need that we have from other resource types outside of what solar can fulfill.

A few things that I'd like to call out here. If you look at the beginning or during the start of the day as the sun starts to rise, you can see that there's a rapid shift in the amount of resources necessary to be

online with a lot of resources having to ramp down during this period, as the solar resources actually ramp up in magnitude. Having a fast-responding resource, such as a natural gas combustion turbine, aids us in being able to maintain that ramp.

If you look at the second highlighted bullet here, this shows that there's some variability throughout the day, whether that be cloud cover that comes in or just some variability in the solar output, having resources online that are able to change their output quickly allows us to maintain that system balance during this period, and that speaks to the flexibility of a natural gas resource.

And then, finally, I'd like to call out the period in the evening as the sun is setting, where we need resources to be able to come online very quickly, and be able to serve the needs of our customers as the sun sets and as we have less availability of solar energy. This kind of speaks to that multipurpose tool that natural gas generation fills, and the fact that it really benefits customer reliability by being both dispatchable and a flexible resource.

CHMN STAFFORD: Mr. Eugenis, the slide here on -- is it slide 84 in APS-11 -- is this representative of, like, all solar output including utility scale or is

this just -- because I think before it was just focused on rooftop solar. Is this -- is this representative of all solar or just rooftop solar?

MR. EUGENIS: Chairman Stafford, I believe that this focuses on utility scale solar.

CHMN STAFFORD: Okay.

MR. EUGENIS: If I can make one final point on this slide before I move on, I'd like to say as we continue to invest in those variable energy resources, such as the solar that we've identified, we're going to have an increasing need for this dispatchable and flexible resources, such as a combustion turbine like the project that we're talking about today.

BY MR. DERSTINE:

Q. So the slide that you've just walked us through, the slide 84, drives home the message, I gather, that natural gas is important, because it has the flexibility, so that makes it an important resource as part of your diverse resource mix, but in analyzing, say, natural gas generation as part of your Integrated Resource Plan, did you take into account variables, like potential cost increases in natural gas, or the relative costs of other resources, like solar, wind, or battery storage as potentially lower cost? And how do you evaluate and compare those resources, given those factors?

A. (MR. EUGENIS) We did. I'm going to spend probably quite some time on the next two slides, because they can be a little bit dense in their information, and it speaks to a thought process that we utilize when developing an IRP. And really the purpose of that IRP is to determine that for different scenarios into the future, what is the least-cost group of resources needed to maintain reliability for our customers?

And so last year as we have performed our study work, we included several different sensitivities or scenarios to determine what changes were made in that least-cost portfolio, if we were to vary some of our inputs. On this slide we focused on changing what our natural gas fuel price would be into the future. That fuel price does not change the capital costs associated with a natural gas facility, but instead, better captures what could be variability or volatility of natural gas pricing into the future, the fuel itself, or the potential for a long-term constraint in supply of natural gas.

What we found in those cases is -- is shown on this slide here. I'm actually going to start on the right-hand screen. And in the right-hand -- on the right-hand side of that screen under "Total natural gas fuel consumption," so by varying the amount of -- or

varying the price forecast for natural gas fuel in the future, I've made it more expensive to run these units. And you can see in our cases we show a corresponding decrease in the amount of energy production from natural gas resources for that higher gas price case.

But I want to call out that as you get closer to when we retire or when we exit from the Four Corners coal facility and the next few years afterwards, there's virtually no difference between the natural gas burns in that higher fuel price case as in our preferred portfolio or really our reference portfolio, which is called in out here. That further speaks to natural gas being a reliability-based resource, really it is what's dispatched when there's few other options on the grid and because it's both dispatchable and flexible, it provides us quite a bit of value during those times.

Now, I want to call out, if you look on that right-hand side screen, but the left-hand slide, this shows the total amount of natural gas capacity that's being built. So instead of talking about fuel burn on this particular chart, I'm focusing on the amount of capacity or nameplate megawatts that are installed to maintain our reliability for our customers.

And what you see is that the difference between our reference case and this high-gas-price case is

virtually none until the very end of the planning period. The total difference in 2038 between these two cases at the end of the planning period is only about a 250-megawatt difference.

Now, what that means, if you take these two charts together, is that while we may burn less natural gas, if that fuel becomes more expensive in the future, we still need the capability from these resources during times of stress on the system, regardless of that fuel price change.

CHMN STAFFORD: So during that time frame, looking at the total of natural gas fuel consumption, so from, like, 2030 to 2033, your demand for gas is pretty inelastic?

MR. EUGENIS: That's correct.

CHMN STAFFORD: Okay. And I'm assuming that has to do with the retirement of Four Corners?

MR. EUGENIS: Chairman Stafford, that's correct.

CHMN STAFFORD: Okay.

MR. EUGENIS: The other sensitivities that we ran as a part of the IRP, had to do with the cost of renewables in these cases. So my first set of sensitivities that I talk through increased the cost of the fuel of the natural gas itself that we were burning.

Now I'm looking at a different side of the equation, which is if the cost of renewable resources were to fall in the future, whether that's driven by additional incentives from, you know, the policy, federal policy, state policy, et cetera, or supply chains kind of maturing and alleviating some of the constraints that we see today, would we still have similar levels of natural gas billed as a part of a least-cost portfolio.

So calling out once again that as we use our long-term capacity expansion tool, we're always solving for least cost at a certain reliability metric. And so all of these portfolios are reliable portfolios for -- and least cost for their input assumptions. Now, what I want to call out is there's very little difference in the total amount of natural gas billed out if renewable pricing were to fall in the future.

So if you look at this furthest bar to the left, and I'm on the left-hand side screen right now, and it's labeled "low cost." That identifies the amount of natural gas resources that the case selects even for lower-cost renewable pricing into the future. And then you can see, in comparison to the reference case and the high cost case, there's really very little difference between these. In fact, the magnitude of difference between that low renewable price case and the high

renewable cost case is about 350 megawatts of change between those.

So, once again, I'm kind of painting a picture here in terms of the need for natural gas resources, if natural gas fuel prices increase into the future, there's very little change to the amount of natural gas facilities we need. And if a renewable capital cost were to change into the future, it has a limited impact in the total amount of natural gas facilities necessary to maintain reliability for our customers.

If I could further --

MEMBER GOLD: Mr. Chairman?

CHMN STAFFORD: Yes, Member Gold.

MEMBER GOLD: Availability of natural gas. Readily available now? Readily available in the future? Do you have access to adequate amounts of natural gas? Will you have adequate amounts of natural gas? I'm assuming that this next election will determine whether or not we drill for more or whether or not we stop fracking or drilling for more. What -- and how have you taken that into consideration?

MR. EUGENIS: Member Gold, we include our limitations in terms of what we have rights for for natural gas into the future. We contract with pipeline

companies on those transportation rights, is what we typically call them, and include that in our modeling going forward to ensure that we do not use more natural gas than we have the ability or right to do so.

As part of resource planning here at APS, we also look at the ability for us to increase those transportation rights and we work closely with those pipeline companies in terms of what our demand will be in the future for natural gas and the possibility of additional natural gas supply being developed.

MEMBER GOLD: So what you're saying is you've looked into this and there doesn't appear to be any problem with you getting enough natural gas to fire this plant as well as everybody else firing their plants.

MR. EUGENIS: Member Gold, that's correct.

MEMBER GOLD: Thank you.

CHMN STAFFORD: Member Fontes, you had a question?

MEMBER FONTES: Thank you, Mr. Chairman.

Mr. Eugenis thank you for your testimony, it's very useful. One question on the sensitivities as it relates to energy storage, because the dispatchability and the things that we'll have to include in the Certificate of Environmental Compatibility. Can you educate and inform this Committee how the energy storage

is factored into sensitivities with respect to the renewable integration and also as it looks on in comparison with the natural gas peaker facility, just so we have got that captured. Appreciate you.

MR. EUGENIS: Member Fontes, energy storage does share some of the characteristics of natural gas in terms of that it is both a dispatchable and a flexible resource. And so if I go back a couple of slides, now on APS-11, that is one of the reasons why battery energy storage continues to be a large portion of what APS has identified as a necessary resource into the future and one that provides reliability and, you know, least cost for customers. However --

CHMN STAFFORD: You went back -- you're on slide 82, you went back to?

MR. EUGENIS: I apologize. Thank you, Chairman Stafford. This is slide 82.

CHMN STAFFORD: Okay. Just making sure that the members that are remote they can, because they should all -- you all have the slide show sent to you, so you can peruse that at your leisure. You're not depending on what we're projecting on the screen here.

All right. There you go. Please proceed.

MR. EUGENIS: Thank you, Chairman.

However, there are some limitations

associated with battery energy storage as it stands today. These are energy limited resources, which means the typical battery storage is four-hour in duration is typically what you see in lithium ion batteries today. And it does not have the same ability to provide energy, like natural gas does, you know, coincident with the capacity that it provides as well. So you have to charge a battery. And a natural gas facility, you can just bring online and it provides both that energy and capacity in realtime.

If I could conclude this portion of my testimony, I just want to further emphasize that all portfolios include similar amounts of natural gas resources, indicating that this is an important part of a least-cost reliable portfolio for our customers going forward.

BY MR. DERSTINE:

Q. And, again, the, I guess, the selection of these different -- the portfolios in the determination of what is least cost, that's handled through the model, the long-term capacity expansion model?

A. (MR. EUGENIS) That's correct.

Q. Talk a little bit about the model in terms of is this a proprietary model for APS or is this a model that's used across the industry? And how do you then

decide what inputs are -- are given to the model as part of your planning process?

A. (MR. EUGENIS) This is a model that's well used across the industry. Its developer is Energy Exemplar, which actually develops two of these tools. We used one of them, the Aurora product, and that long-term capacity expansion tool is an element of that optimization tool called Aurora. Many utilities use these. SRP uses this, that's Salt River Project, utilizes this same tool, as well as numerous others, both in the WECC, as well as throughout the United States.

Q. You said part of this, when you're talking about the sensitivities, you were -- in order to test those sensitivities, you're inputting different prices, for example, using -- looking at slide 87, you were using different capital costs for solar, wind, and energy storage to compare -- make the comparison to natural gas?

A. (MR. EUGENIS) That's correct. I have a slide later in this -- in my testimony in the RFP section that gives a graphical depiction of the inputs that are used in the long-term capacity expansion software, and some of the interactions that take place as we develop that least-cost reliable portfolio. So I will -- I will spend some time during that portion of my testimony diving into that a little bit deeper.

But I would like to say now that it's the same tool that we use in the IRP that we use for the RFP evaluation, and it relies on much of the same data, and so there is a strong amount of consistency between those two evaluations.

Q. Okay. So I think you indicated that that wraps up your -- the testimony that you wanted to add on the Integrated Resource Plan, the 2023 IRP.

Do you want to now -- you looked at your watch, which prompted me to look at my watch, we're at 4:35. Is this a good stopping point in your testimony, you're about to move into the All-Source RFP, if we're going to go through the flyover simulation to allow the Committee to have an understanding of where the Redhawk pAnt is and where the expansion project will be constructed, and so they have an understanding and can take a vote on whether or not to go out on a -- on a bus tomorrow and take a tour. Is this a good time for us to break?

A. (MR. EUGENIS) It is.

MR. DERSTINE: Okay. So, Mr. Chairman, I think it will take just a minute for Mr. Turner.

Mr. Turner, I guess maybe this would be a -- since you're going to narrate the flyover simulation, why don't we have you sworn and get you under oath.

CHMN STAFFORD: Oh, a different witness is going to do the presentation?

MR. DERSTINE: He's going to -- Mr. Turner will do the flyover simulation, so why don't you state your name and address for the record, Mr. Turner.

MR. TURNER: Sure.

My name is Mark Turner. I work for AECOM at 7720 North 16th Street, Suite 100, Phoenix, Arizona 85020.

MR. DERSTINE: Okay.

CHMN STAFFORD: And would you prefer an oath or affirmation?

MR. TURNER: Oath is fine.

(Mark Turner was duly sworn by the Chairman.)

CHMN STAFFORD: Please proceed.

MARK TURNER,

called as a witness on behalf of the Applicant, having been previously sworn by the Chairman to speak the whole truth and nothing but the truth, was examined and testified as follows:

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D I R E C T E X A M I N A T I O N

BY MR. DERSTINE:

Q. Mr. Turner, you and your associates at AECOM were asked to prepare a flyover simulation. Do you want to give us a little background on that and then let's get it up on the screen?

A. (MR. TURNER) Sure.

Grace, there was a still image I was hoping to put up on the -- there we go. Thank you.

I did want to show -- well, first of all, let me answer the question. We used available geographic information to produce a 3-D flyover. The screen on the right has that beginning image. The screen on the left is showing the flight path that we're going to take. It's just about a minute-long video, where approximately the red line that you see on that image is the flight path, and it's approximately 25 miles.

And, thank you, you can take that screen off and you can put the video. But before you start the video, I would like to point out on the right screen now -- well, actually, on both screens -- we are in the West Valley of Phoenix. And maybe many of you are from here, and you recognize Loop 303 and the I-10 intersection. Our hotel is about four miles away from this intersection. We're further away, about three or four miles.

Q. Which direction?

A. (MR. TURNER) Towards the bottom of the screen, which would be east. We're about four miles east from this location. In the top left of the image is a north arrow, so north right now is pointing to the right side of the screen. And I would like to point out, just to get our bearing here -- I'm not sure I'm using the -- oh, there it is -- the White Tank Mountains are the mountains in the top right of the screen and north of I-10. The community of Verrado is at the base of that area.

And I think I would like to start the video now and we're going to go to about 25 seconds, and then I'll have it paused again. This is, again, I-10, Citrus, Jackrabbit, are the intersections, Verrado coming up here. We're leaving Goodyear and heading into Buckeye. You can see the agricultural lands of Buckeye slowly being converted into communities, residential development. This is about where we're going to pause, somewhere in here.

And I'd just like to point out, so the downtown Buckeye is to the right area of this image, just off to the end, the downtown part. State Route 85, which cuts in between I-10 and state -- Interstate 8 in Gila Bend, that's the main road. It used to be two-lane, it's now four-lane. I also want to point out in the top left of

the screen, you can see the farmland, the green of the farmland creeping into the mountains there, the Buckeye Hills. That's the Gila River at that location. And this is the bend of the Gila River. We get a little better view at another part of the video, but I just wanted to point out where we are in that regard.

Thank you. You can please advance.

In addition to the Gila River, you can see the Hassayampa River label coming up. That is coming out from the north and draining right to the Gila River. Old US 80, Salome Highway, is at this location as well, and the agricultural land bleeds into some cattle industries.

We're going to stop it here in just a -- yeah, that's fine. Actually, go two more seconds, two or three. There we go. Thank you.

So we're now coming into the Arlington Valley area, and I want to point out a couple of things here. The -- you'll find out in my presentation tomorrow or when we get to it, that the nearest resident is 1.8 miles away, that's at the location right where you see the 355th Avenue and Elliot Road come together, right where the cursor is now. And that's 1.8 miles from the existing Redhawk Power Plant. That is also the southernmost home -- southwesternmost home in the residential community that is nearest here. And this is

this area with near the 355th Avenue is the community we'll talk about more tomorrow.

And I want to point out one more structure here, this white structure on the image on the right side of the screen is the Arlington Elementary School, which is where we held the public open house on June 6th.

You could go ahead and advance.

We're going to -- you see a lot of labels and we're going to pause it here in just a moment and I'll start to talk about all those.

Go ahead and pause. Thank you.

So let's talk about -- we'll start with the Redhawk labels. The existing Redhawk Power Plant is the blue sign with white letters, and it's pointing down to the existing Redhawk facility. And just south of that is a billboard sign that says "Redhawk Expansion," with yellow letters. And that is the expansion project simulated at that location. And we can talk more specifics. I'll let questions arise there.

The blue property line that you see here is the Redhawk property boundary. And I'm highlighting it with the cursor. And the yellow inside of that box is where the expansion project will take place. And I want to point out -- let's go ahead and point out the red lines that you see. The red lines that are -- sorry,

my -- there we go. The -- the red lines you see coming out of the expansion project would show it connecting to the existing Redhawk switchyard, which has existing lines coming out to the Hassayampa switchyard, and this is how the existing Redhawk Power Plant is connected to the grid and it is where the expansion project would be connected to the grid as well.

One thing I failed to point out is all the solar development as you were coming in. I think you can it here, and it does look different than agricultural fields, but the majority of the land around Redhawk Power Plant in the last decade or so has expanded to be a lot of solar, a lot of -- I don't know all the ownership of those out here, there are multiple owners.

One of the solar facilities connects into the Chukar Substation, that's their substation. I do want to point out there are other power plants in the project vicinity. Redhawk was the last to be constructed. There is Mesquite Power Plant -- this cursor is not working very well, my apologies -- Mesquite Power Plant has a label there. It is located west -- northwest of the Redhawk Power Plant, and it's accessed by Elliot Road, which is the same road that the Redhawk Power Plant is accessed.

Beyond Mesquite is another power plant further

west called Arlington Valley Power Plant. And even beyond that power plant is a new solar development even further west. And then the Palo Verde generating station is located north of all of these facilities and is accessed through Wintersburg Road, and so it's north of the Redhawk power Plant.

Q. Mr. Turner, I think in my opening, I just want to check with you, I think I indicated that Palo Verde is somewhere around four miles to the north of the Redhawk Plant, and then the Arlington -- well, the Mesquite Plant is about a mile and a half away, and then Arlington Valley behind that is about 2.8 miles. Are those distances sound about right to you?

A. (MR. TURNER) Those are approximate, yes.

CHMN STAFFORD: Member Fontes, do you have a question?

MEMBER FONTES: Yes, sir.

Mr. Turner, can you just orient me for my own purposes where the Palo Verde Substation is with respect to this infrastructure layout?

MR. TURNER: The Palo Verde Substation? I will probably need help with that. I believe they connect back down to the Hassayampa switchyard. I'll need someone else to answer that question, my apologies.

MEMBER FONTES: And that is my

understanding, but just for this geographic reference, I appreciate it.

CHMN STAFFORD: I believe Mr. Cole can answer that.

MR. COLE: Yeah, Member Fontes, the Palo Verde switchyard itself is located on that map, if you were able to go just slightly east of the actual Palo Verde Generating Station, the Palo Verde switchyard is located there. That switchyard is then connected to the Hassayampa switchyard with several lines, effectively making them electrically equivalent, and so it's sort of an extension. But the Palo Verde switchyard is right there on the Palo Verde site.

MEMBER FONTES: Thank you. Appreciate it.

CHMN STAFFORD: And then Palo Verde feeds into the Hassayampa switchyard, correct? That's what you were saying is this -- it doesn't -- it doesn't go anyplace else from the Palo Verde substation or switchyard, but to the Hassayampa, and then it goes from there to California and -- is that where the big tie is in for Devers --

MR. COLE: Chairman Stafford, actually, both the Palo Verde Switchyard and the Hassayampa Switchyard have a great number of lines that emanate from them. Some of them going west to California, some of

them going east to Phoenix, some going other directions. So both of them contain transmission lines leaving the area.

CHMN STAFFORD: Okay. Thank you.

MEMBER FONTES: Mr. Chairman, if I could do a follow-up on that.

CHMN STAFFORD: Yes, Member Fontes.

MEMBER FONTES: Tomorrow if we get to it when we're on the interconnects, since we're doing an expansion hearing, if somebody could just walk us through the circuit. I understand you've got a POI and you're going to the interconnect, but just how that circuit is going to lay out to get to the broader grid, that's what I was hoping to get just an overview of tomorrow. I'd appreciate that.

MR. COLE: Member -- yeah, sure. Member Fontes, Mr. Spitzkoff will address that tomorrow or whenever his testimony is.

MEMBER FONTES: When we get to the certificate, the actual Findings of Fact, we have to talk about availability, reliability, and the -- and I want to make sure that I've got a clear understanding for myself and fellow members of that circuit, since it's an expansion project. So that's the context.

CHMN STAFFORD: Thank you, Member Fontes.

Member Little?

MEMBER LITTLE: Are the square -- the very dark squares that are adjacent to the Redhawk Power Plant and also adjacent to Palo Verde, are those ponds, cooling ponds?

MR. TURNER: There are cooling ponds in this image. Palo Verde's are near where you see the label "Wintersburg Road." They're slightly south of the generating station themselves. Redhawk's is slightly north and then you can see Mesquite's there is the green ponds. And Arlington Valley seem to have a little bit of a blue hue to them. They all have ponds.

MEMBER LITTLE: Thank you.

MR. TURNER: Any other questions at this location?

We have a little bit more of the video. The switchyard you were asking at Palo Verde Generating Station won't have a label, but we're getting ready to do a 360 flyover, you may get to -- or 360 around this Redhawk, you may get to see that, but it won't have a label.

Go ahead and run.

And so we're switching, we're looking north now. And now we're switching back, you're looking east back towards Buckeye. The Gila River is the green swath

heading further off the screen. And, again, we're just trying to give you a good view of Redhawk.

So you can pause it right here.

And that was the flyover tour. We can do certain parts again. I'm happy to ask [sic] questions.

BY MR. DERSTINE:

Q. Without getting the members of the Committee motion sick, can you spin us around and maybe show us again where the residential development is and where that is in relation to the plant? Are we able to do that?

A. (MR. TURNER) Yes.

If you can go back to about second 58, I believe. Maybe just a little bit more, a couple seconds more. That's fine. Thank you.

So you'd like me to point out the community that's nearest?

Q. Yeah, you testified that the closest resident is 1.8 miles away and then that closest resident I think is part of a larger, I guess, I think it's a fairly large lot subdivision or platted development, and I assume, maybe you can tell us, then, the distance of the other residents within that subdivision how far they are away from the Redhawk Plant.

A. (MR. TURNER) Sure. Happy to. So the community -- this is the only platted community in the

Arlington Valley area. It was platted in 1970. And it is called Phoenix Valley West Unit One. There was never a unit two or any other subsequent numbers. The bottom area of this community is Elliot Road.

Q. Can you use your cursor?

A. (MR. TURNER) I'm sorry, yes.

Elliot Road, which is a dirt road at this community when it's east of 355th Avenue. And 347th Avenue is the eastern boundary -- and I need my notes in front of me, my apologies. One second, please. I just didn't want to misspeak.

The northern boundary of it is South Mountain Road. And so you're asking about distances, the nearest resident is 1.8 miles away. This platted community is a mile and a quarter wide east to west and a mile and three-quarters long north to south.

MEMBER GOLD: Mr. Chairman?

CHMN STAFFORD: Yes, Member Gold.

MEMBER GOLD: Mr. Turner, could you point to where they are on the map? Are they even visible on the map?

MR. TURNER: It is very hard to see because the roads are dirt, so these homes are in this area that I'm highlighting on the screen. And when we get to the notification area, we'll talk more in detail, but there

are approximately 200 residents in this area spread out.

MEMBER GOLD: And that area is in excess of two miles from the plant?

MR. TURNER: Correct. The closest is 1.8 miles.

MEMBER GOLD: And where is the 1.8 mile, would you just put your cursor on it?

MR. TURNER: I will. It's right where you see the 3 in the "355th Avenue." It's right there.

MEMBER GOLD: Okay. This, I'm gathering, is a Google Earth?

MR. TURNER: Google Earth imaging.

MEMBER GOLD: And you couldn't zoom in to show us what it looks like?

MR. TURNER: I can pull up Google Earth, if you need to --

MEMBER GOLD: I'd like to see --

MR. TURNER: I'm trying to identify the location. It is a residence that was built in 2016. I can try to advance the slide here a little bit. We were focused on the Redhawk, not necessarily residential, but I'm happy to produce an image for tomorrow if you would like to see something better for this platted community.

CHMN STAFFORD: Or if we can drive by it on the tour.

MEMBER GOLD: I would prefer seeing an image, but, Mr. Chairman, whatever you would wish.

MR. TURNER: That would be tour stop 2 tomorrow at this location where we did have a noise and a visual analysis.

MEMBER GOLD: Mr. Turner, your plant appears to be in the middle of solar fields, with a whole bunch of other plants around it, doesn't look like it's in a residential area. It's almost a mile away from the nearest home. A visual tomorrow would be very much appreciated, and we can decide if we really want to go on a tour.

CHMN STAFFORD: Well, we kind of need to decide this evening because they had to schedule -- they have the bus that's tentatively scheduled to leave tomorrow at 9:00 a.m., and they'd like to know before we recess the meeting tonight whether they're going to cancel that or not.

MEMBER GOLD: So is there any way to zoom in on this?

MR. DERSTINE: We're effort- -- Mr. Chairman and Member Gold, we're efforting right now to see if we can get Google Earth pulled up using the audio team.

MEMBER MERCER: Mr Chairman?

CHMN STAFFORD: Yes, Member Mercer.

MEMBER MERCER: So this area, I was looking at Google, is it Tonopah?

MR. TURNER: The -- Arlington -- Tonopah is up closer to I-10. Arlington is where the community -- the unincorporated community that this area is --

MEMBER MERCER: Arlington, okay. Thank you.

MEMBER GOLD: Mr. Chairman?

CHMN STAFFORD: Yes, Member Gold.

MEMBER GOLD: For Mr. Turner, is it convenient to get a Google image up there?

MR. TURNER: They're trying to do that for you, sir. I apologize, I don't have the setup here, my computer is not hooked up.

MEMBER GOLD: So the techs are working on it?

MR. TURNER: Yeah. I can share a little bit about this community, though, if you would like.

MEMBER GOLD: Yes, please.

MR. TURNER: There are approximately 200 homes in that, I'll call it a neighborhood, for lack of a better term right now. When Redhawk was constructed there were about six homes that had been constructed and

were above ground, residents. In our mailings that we sent out for this project we identified approximately 200 homes, but we mailed letters to every property owner there because of future speculations of residential development.

MEMBER GOLD: What I'd be interested in, and I think you just said it, is when Redhawk was constructed there were only six homes, so there's about 194 homes built there after Redhawk was constructed and operational?

MR. TURNER: That's true.

MEMBER GOLD: Have any of them complained about the noise?

MR. TURNER: I'm not a person to be able to address that question. I don't work for APS. I don't know of any complaints or anything at Redhawk.

MEMBER GOLD: Mr. Derstine, will we be able to get that information tomorrow?

MR. DERSTINE: Whether there have been any noise complaints for the residents in this area?

MEMBER GOLD: Yeah. It doesn't seem likely that there would be because they built houses after the project was operational.

MR. DERSTINE: Yeah, I'm not sure where those complaints would be lodged, but we'll do our best

to dig into it.

MEMBER GOLD: Okay. Oh, it looks like we're getting our map.

MR. DERSTINE: There you go.

MR. TURNER: So just under the Western Star Boulevard is the home that is the nearest and the edge of his property is 1.8 miles away.

CHMN STAFFORD: Can you use the red -- can you use the red pointer, it would be more visible on that than the -- or is it not going to work on that screen? Okay. All you can use is that one? Okay. It looks like those houses are pretty spread apart. They're not --

MR. TURNER: These are one-acre lots. They cannot be any smaller, and only about half of them seem to have been -- have built structures.

MEMBER GOLD: All right. And where -- if you can zoom out so we can to see where the plant is, how far away it is.

MR. DERSTINE: Can you pull us back --

MEMBER GOLD: And just put your arrow on the plant, please. So there's a whole bunch of solar arrays in between the eight-tenths of a mile and that residential community?

MR. TURNER: Yes, sir.

MEMBER GOLD: And --

CHMN STAFFORD: I thought it was 1.8 miles, not .8.

MR. TURNER: 1.8 miles --

MEMBER GOLD: Oh, so almost two miles away?

CHMN STAFFORD: Yeah.

MEMBER GOLD: Oh, Mr. Chairman, thank you very much.

MR. DERSTINE: Anything else the Committee would like to see using the Google Earth?

(No response.)

CHMN STAFFORD: All right. Members, are we interested in a physical tour or does the -- are we satisfied by the virtual tour and Google Earth?

MEMBER GOLD: Mr. Chairman, Member Gold is satisfied with the Google Earth.

MR. DERSTINE: If you would like, Mr. Turner can present to the Committee the route tour as it's -- as he's laid it out and how long it will take and the stops that we would make if you want to consider that.

CHMN STAFFORD: Well, I think the most salient point is that it's a four-hour tour roundtrip. So --

MEMBER GOLD: I said no.

CHMN STAFFORD: All right. I'm not seeing

any interest from the members in a tour. So I think that we will not be taking a tour. Thank you for being ready to provide one if we so desired, but it looks like it won't be necessary. But we appreciate your efforts anyway.

MR. DERSTINE: Very good. Well, then, this -- I don't think Mr. -- unless there's more questions for Mr. Turner on the flyover or in landmarks or developments surrounding the plant, which I think we've fully covered the one development that is in any proximity to the plant, then I think that would probably be a point for us to stop for the day, and then I think you have public comment scheduled for 5:30.

CHMN STAFFORD: Yes, we do.

MR. DERSTINE: Okay.

CHMN STAFFORD: You're right on schedule. I appreciate that.

MR. DERSTINE: Well --

CHMN STAFFORD: So with that, we will -- we will stand in recess until 5:30, at which time we will come back for the public comment. Depending on the amount of public comment we receive, we will if -- even if no one comes, we'll stay here until at least 6:00 p.m. to allow people the chance to come on, either in person or virtually or by -- I think we can do it Zoom, by

phone, or in person. So we will -- we will be here until we hear from everyone that shows up, or until at least 6:00.

MR. DERSTINE: Okay. I guess to make sure at least for anyone who has been listening to the hearing until now, am I correct in understanding, Grace, that there's a separate link for public comment?

(No audible response.)

MR. DERSTINE: Okay. And that's found on, what, you can find it on the APS website?

(No audible response.)

MR. DERSTINE: All right. All right. I think that covers it.

CHMN STAFFORD: Is it also on the Commission website?

MR. DERSTINE: We'll --

(No audible response.)

CHMN STAFFORD: "Should be," is that the response I heard?

MR. DERSTINE: That's what she said. She said "it should be."

CHMN STAFFORD: It should be. It's definitely on the company -- the project website, and it should also be on the Commission website, but yes, you're right, that's a separate Zoom for the public comment.

Anything further?

MR. DERSTINE: Nothing.

CHMN STAFFORD: All right. With that we are in recess.

(Recessed from 5:00 until 5:30 p.m.)

CHMN STAFFORD: Let's go back on the record.

Now is the time set for public comment for Line Siting Case 234. With us here we have Mark Cardenas. Please come to the podium. You have five minutes to make your comment.

MR. CARDENAS: Good evening, Members of the Line Siting Committee. Mark Cardenas with Carpenters Local 1912. Historically our union is made up of 6,000 members that build everything from chip plants to solar to even -- even though it's the carpenters we also do build -- we also work at Palo Verde, our mill rights are there, and especially on natural gas plants.

APS and its affiliates have been good partners with us for decades and decades where they employ many folks who are in the middle class who are putting the pay that they get, which is a good salary, pays for homes, you know, the roofs over their head, the food on their table, and has put many of our members' children through college.

We look forward to working on the expansion of Redhawk and ask that you support this and keep supporting good jobs, keep supporting good union jobs, and supporting our carpenters, our allied crafts and trades.

Thank you.

CHMN STAFFORD: Thank you.

We have no other commenters in the room, but online we have Sandy Bahr.

MS. BAHR: Good evening, Mr. Chairman. Can you hear me okay?

CHMN STAFFORD: Yes, we can.

MS. BAHR: Okay. Great. Chairman Stafford, Members of the Arizona Power Plant and Transmission Line Siting Committee, thank you for the opportunity to speak this evening.

My name is Sandy Bahr, and I'm the director of Sierra Club's Grand Canyon Chapter, which is the Arizona chapter. And Sierra Club urges the Power Plant and Transmission Line Siting Committee to deny the Certificate of Environmental Compatibility for the Arizona Public Service proposed Redhawk Power Plant Expansion Project.

As you know, the siting statute requires that this committee considers projects' environmental

impacts, including impacts on air quality, noise, visual impacts and "total environment of the area," to determine if a project is compatible with a proposed site. Here, the application clearly demonstrates that the project will have harmful environmental impacts in that area.

This $443 million project is not in the public interest, as it will lock in this new gas for decades, as we have stated previously, and is extremely expensive, costing me and other APS ratepayers dearly. There are much cleaner, less environmentally harmful, and more affordable options available, including solar, storage, wind, and energy efficiency.

Building significant amounts of additional gas will cause harm to the total environment of the area and, again, is not in the public interest. APS has not demonstrated the need for this project. Given high and volatile gas prices and the availability of lower-cost alternatives, like solar and wind, APS may find that it is increasingly uneconomical to generate electricity from this project, especially as the company transitions to clean energy.

This expansion project risks becoming an expensive and unnecessary stranded asset that degrades the environment, while producing dirty, high-cost power. APS itself has acknowledged concerns about relying more

and more on out-of-state gas supplies, delivered by increasingly constrained gas pipelines. This can increase reliability risks to the electric system overall. Reliability risks are also exacerbated, because there are no gas storage facilities here either.

This methane gas plant expansion will also pollute the air, and that will happen in an area that already has poor air quality. Maricopa County is an ozone non-attainment area and also exceeds standards for particulates. The American Lung Association gives Maricopa County a failing grade. It is only one of two counties in Arizona that got such a grade. You approved a big power plant in the other one just last week.

Air pollution from this project -- air pollution will worsen existing pollution. The plant will emit air pollutants, like nitrogen oxide, particulates -- coarse particulates known as PM 10 and fine particulates known as PM 2.5, sulfur dioxide, volatile organic compounds, and carbon monoxide, as well as hazardous air pollutants, including formaldehyde.

And we think that it's particularly concerning because of the harmful impacts those pollutants have on human health. And I won't go into how they harm human health. Again, we know that they can contribute to heart attacks, premature deaths, reduce

lung function and other respiratory issues. I encourage you to take a look at that.

By increasing these air pollutants, the Redhawk Expansion Project will cause harmful impacts for people in Maricopa County and throughout Arizona, and especially for nearby residents, including children. There -- as you know, there's a residential neighborhood located less than two miles from the Redhawk Plant and Arlington Elementary School, and its community sports fields are about two and a half miles from the plant. Residents and school children should not have to breathe in more pollution because of unnecessary, expensive gas.

An analysis of Redhawk's emissions using EPA's Co-Benefits Risk Assessment Health Impact Screening and Mapping Tool shows that exposure to air pollution from the project would cause increased healthcare costs between 8.9 million and 15.7 million per year nationally. People living in Arizona would bear more than 85 percent of those costs. And pollution from the project would increase healthcare costs in Arizona by between 7.6 million and 13.6 million per year.

There's also the increase in greenhouse gas emissions, which is of concern. About 45,900 tons of greenhouse gases per year. And also, the project will increase water consumption in the area. Again, an area

that already has -- is constrained relative to groundwater resources.

For all of these reasons -- and I would state more but I don't want to take too much more time -- we urge you to deny the CEC application for the Redhawk gas plant expansion.

Thank you.

CHMN STAFFORD: Thank you.

Also online we have Shelley Gordon.

MS. GORDON: Thank you for the opportunity to speak today.

So my remarks are similar to Sandy's, but I'm taking a slightly different angle. So -- so here we are again speaking out against another methane gas project by APS. This time APS wants to add another four units of methane gas at a price tag of $443 million. They want to build it, as Sandy said, less than 2 miles from a residential neighborhood and 2.5 miles from an elementary school. The impact of ozone pollution alone and potential methane leaks should be enough to deny the CEC application to APS.

But I believe there's an even bigger question we as tax ratepayers should be asking ourselves and our politicians, which is whether APS, Arizona's largest monopoly utility, is truly serving ratepayers

with its continued investments in gas and far less cleaner, cheaper renewable energy and storage. After all, customers have no choice when it comes to their electricity or where it gets located. Under the monopoly model, there is no energy competition. Ratepayers either pay APS for more dirty energy or spend up to $30,000 to invest in their own rooftop solar and storage, which APS now wants to levy additional charges for, including a grid access charge, just for the privilege of doing that.

Until AP -- Arizona elected officials are willing to take on the electricity behemoths, like APS, and explore Arizona's benefit of energy choice and competition, we will be stuck with whatever dirty energy APS is generating and forcing upon residents.

Under the monopoly utility structure, the more fossil fuel APS generates and sells to ratepayers, the higher the payouts to shareholders. And no other competitors are legally authorized in the state to offer better options to customers. APS is able to guarantee investors about a 10 percent return on this $443 million gas plant. That means that shareholders will get about $44 million in payouts. So the incentive to shareholders is clear, the larger the capital project, the more dividends they're able to reap.

The end result is that APS has a financial

incentive to generate dirty energy for its own profits and to pay shareholders and to pass higher costs on to ratepayers as a, quote-unquote, regulated utility. What we need is competition and new laws for generation to keep energy local, cleaner, and cheaper, with more choice for customers, not a 100-plus-year-old centralized captive ratepayer model that no longer meets our community's needs.

Thank you.

CHMN STAFFORD: Thank you.

I see an "Andrew" on the line. Do you wish to make comment, sir?

(No response.)

CHMN STAFFORD: You're on mute.

You're still on mute.

MR. ALTMAN: Apparently I found the right button.

CHMN STAFFORD: Can you please state your name and spell your last name for the court reporter?

MR. ALTMAN: My name is Andrew Altman, A-l-t-m-a-n. I basically got a flier in the mail, so I wanted to find out what's going on, because I have some property out there.

And so behind my property, I'm out around 350 and change down there. And I, you know, south of it,

the mountain that used to be there is no longer, so I'm basically one of the people that wants to eventually build out there and live at my house there at that property there, and I'm trying to find out how this is affecting it.

It seems like there's no more nature. So I'm trying to find out what's going on. That's really what I'm here about. Just to listen.

CHMN STAFFORD: Does that conclude your comments?

MR. ALTMAN: It is -- it does.

CHMN STAFFORD: All right. Well, thank you. I think the person with whom you need to speak will be the applicant. They will be able to answer all of your questions about what's going where and its relation to where your property is.

I'm looking to APS, who -- who do you have to liaison with the public?

They're speaking amongst themselves.

MR. DERSTINE: Well, Mr. Altman, there is a project website that we've used to announce and gain feedback concerning the Redhawk Expansion Project. Through that website you can just go to the APS.com website, and go to the -- I think it's the project page, and you'll find this project and you can provide comment

or can someone just feed me the phone number for the comment line? Does someone have that? Sandy or Mark?

MR. TURNER: Just a minute.

MR. DERSTINE: We're getting you also a phone number, Mr. Altman, where you can call and ask for information and provide comments, give us your viewpoint concerning the project, but if you need additional information, leave a message and someone who has a lot more information about the project than I do will get back with you.

The phone number -- are you ready for the project phone number?

MR. ALTMAN: Yes.

MR. DERSTINE: It's 1-800-484-1358.

And then if you want to --

MR. ALTMAN: Do you want to give yours out?

MR. DERSTINE: If you need it, I'll give it to you, but there's also the project website that's APSRedhawkProject.com. And there will be a virtual open house that will give you a lot more information about what's being planned out at the Redhawk -- existing Redhawk Plant. And, again, leave a message on that phone line, and ask for additional information, and someone will certainly get back with you.

MR. ALTMAN: Well, how do I get in touch

with you if I want to get in touch with you? Leave a message? I don't necessarily need you to put your phone number out in the public, I'm just trying to find another way.

MR. DERSTINE: Yeah, this is -- call that number and ask for information, and then some -- the right person will be in touch.

MR. ALTMAN: The right person. I can't wait.

MR. DERSTINE: Yeah.

CHMN STAFFORD: That will be a live human being, right, Mr. Derstine?

MR. DERSTINE: It will be a person, who can answer --

MR. ALTMAN: Not one of those domino things that drive through the town, right?

MR. DERSTINE: I'm sorry, I missed that.

MR. ALTMAN: Never mind. Go back to your meeting. Thank you very much.

MR. DERSTINE: Okay.

CHMN STAFFORD: Thank you, sir. Do we have anybody else online or on the phone to make public comment?

(No response.)

CHMN STAFFORD: No. All right.

Well, we will remain here until 6:00 to allow members of the public to make comment. So I guess while we're waiting for any more to arrive, we can go off the record.

(Recessed from 5:46 p.m. until 5:56 p.m.)

CHMN STAFFORD: Let's go back on the record.

Is there anyone else online that would like to make a public comment? I see a "Z05588" with their camera on.

(No response.)

MR. DERSTINE: I'm told that's an APS person, who is probably just listening in to see what will happen.

CHMN STAFFORD: All right. Anyone else on the phone or on the Zoom that would like to make public comment that has not already done so?

(No response.)

CHMN STAFFORD: I'm looking at the AV team and they're saying there's no one else to make comment. We'll wait until at least another three minutes, until 6:00, before we recess the hearing.

It is now 6:00. Are there any other -- are there any members of the public that wish to make comment at this time?

(No response.)

CHMN STAFFORD: Going once, going twice.

Well, thank you very much, everyone. We will be back tomorrow morning at 9:00 to resume testimony by APS. With that we are in recess.

(The hearing recessed at 6:00 p.m.)

STATE OF ARIZONA)
COUNTY OF MARICOPA)

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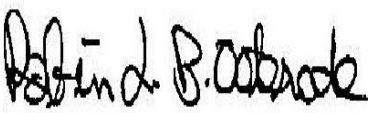
I CERTIFY that I have complied with the ethical obligations set forth in ACJA 7-206(F)(3) and ACJA 7-206 (J)(1)(g)(1) and (2). Dated at Phoenix, Arizona, this 26th day of August, 2024.



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