*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

BOSTELMAN: So, need to do some COVID procedures first over that. For the safety of our committee members and staff, pages and the public, we ask those attending our hearing to abide by the following procedures. Due to social distancing requirements, seating in the hearing room is limited. We ask that you only enter the hearing room when it is necessary for you to attend the bill hearing in progress. The bills will be taken up in order posted outside of the room and that will be the invited testimony specific today, those individuals, as posted, are welcome to come up in order. A request that everyone utilize identified entrance and exit doors-- entrance and exit doors to the hearing room. And we ask that you wear a face covering while in the hearing room. Testifiers may remove their mask-- their face mask covering during testimony to assist committee members and the transcri-- transcribers in clearly hearing and understanding the testimony. Pages will sanitize the front table and chair between testifiers. Public hearings for which attendance reach a seating capacity or near capacity, the entrance door will be monitored by a Sergeant at Arms who will allow people to enter the hearing room based upon seating availability. Persons waiting to enter a hearing room are asked to observe social distancing and wear a face covering while waiting in the hallway or outside of the building.The Legislature does not have the availability due to the HPAC project of an overflow hearing room for brief-- for hearings, which attract several testifiers and observers for hearings with a large attendance, we request only testifiers enter the hearing room. Want to welcome everyone to the Natural Resources Committee. I am Senator Bruce Bostelman and I am here from Brainard and I represent Legislative District 23. I serve as the Chair of this committee. I ask that you abide by the following procedures to better facilitate today's proceedings. Please silence-- silence or turn off your cell phones. When you come to testify, please speak clearly into the microphone, and I want to reiterate that loud and clear is very important. It is difficult for us to hear and if you would please do that. You may remove your mask and tell us your name and please spell your first and your last name to ensure we get an accurate record. Today is for invited testifiers only. The order of testifiers is as follows: Mark Kirby, Kevin Wailes, Tom Kent, Tim Burke and Lanny Nickell. No displays of support or opposition to a bill, vocal or otherwise, is allowed at a public hearing. Testifiers will have 10 to 15 minutes to speak. We'll-- the lights will go 10 to 15 minutes, you'll see a green

light. The 15 minutes will turn on the yellow light and then at 20 minutes we'll turn on the red light if you go that long. The committee members with us today will introduce themselves starting on my left.

GRAGERT: Good afternoon. Senator Tim Gragert from District 40, northeast Nebraska,

HUGHES: Dan Hughes, District 44, 10 counties in southwest Nebraska.

BOSTELMAN: And on my right.

J. CAVANAUGH: John Cavanaugh, District 9, midtown Omaha.

MOSER: Mike Moser, District 22. It's Platte County, parts of Colfax and Stanton Counties.

BOSTELMAN: Senator Moser also serves as the Vice Chair of the Committee. To my left is the committee legal counsel, Cyndi Lamm, and to my far right is committee clerk, Katie Bohlmeyer. Our pages for this afternoon are Noah and Savana, and we thank them for coming here this afternoon to-- to help us with the hearing on LR48. With that, I would invite Mr. Kirby to come forward, but as Mr. Kirby comes forward, we do have one position letter that we received from Stromsburg, but I just want to kind of set the table first, kind of going through the progression of what we want to hear. What I want to hear today is when this happened in-- a couple of weeks ago, I was in Superior, Nebraska. I sat in my dad's house, and the lights went off. So I called the utility manager of the city and I said, what's going on? He said, I don't know. He says there's nothing wrong in town. We have no issue, it's NPPD. So I turned around and I called Shirley, my contact at NPPD, and she says she don't know-- she's not for sure what's going on. She'll contact, find out what's going on, let me know, and also let the utility manager know in Superior. I've heard that in a number of cities across the state. One city in specific, I heard that they were notified they were going to power off the generators. The hospital went to operate the generators, generators didn't work. So they were-- they were-- they did not go offline. But my point being is, as we look at what happened and as we talk about today, it's-- its safety. It's about what happened and it's about how we're going to eliminate this thing from happening, this type of a situation happening in the future. So I look forward to-- the committee, looks forward to hearing from each and every one of you. I

asked the general manager, Mr. Mark Kirby, he's-- he's the general manager at Butler Public Power District, to come in today just to provide us information of what they experienced. What was it he experienced at that-- at Butler Public because I live in that district and I know our power went off, and I got a call from several of my constituents about the power going off. So I thought it was prudent for us to start, since the cities didn't necessarily come in, but have someone come in and express to us what they experienced and how things to move forward from there. After Mr. Kirby is finished, then we'll go into our Public Power Districts, LES, OPPD, and NPPD, and then wrap up with the Southwest Power Pool. So with that, I'll turn it over and we'll open testimony on LB-- or LR48 and Mr. Kirby, you're welcome.

MARK KIRBY: Thank you, Senator. Excuse me. Good afternoon, Chairman Bostelman, and members of the Natural Resources Committee. My name is Mark Kirby. That is M-a-r-k K-i-r-b-y. I'm the general manager of Butler Public Power District located in David City, Nebraska, and I'm here today to testify on the district's behalf for LR48. There was a lot of talk about an Arctic front stretching from North Dakota to Texas leading up to the week of February 15th. Local weather forecasts were predicting some very cold days of the upcoming week with temperatures well-below zero, and the outcome would be very unexpected. On Saturday, February 13, NPPD notified customers and the public of an emergency meeting to purchase more natural gas for the Beatrice Power Station due to extreme cold weather pattern in Nebraska and across the SPP footprint. On Monday, February 15th at 11:00 a.m., the outside temperature at this time was 9 degrees below zero, NPPD held a second emergency meeting to purchase additional natural gas for Beatrice Power Station and Canaday. During this meeting NPPD CEO, Tom Kent, spoke about possible rolling blackouts. During the emergency meeting, the NPPD board did take public comments. I asked the question of how the rolling blackouts would be handled and communicated to us the customer. NPPD answered by informing us that they would be holding an emergency customer meeting Monday, February 15, at 4:00 p.m. to discuss this topic with us. Not too much later at 12:09 p.m., with a negative 9 degree temperature outside, we started to receive phone calls of outages from our customers north of David City, including the Octavia area and from our customers to the east in the Malmo area. We noticed that the outages were from three different substations. Our operations department started getting our crews lined up to respond to the outages. Before the crews left the headquarters, the operation

manager called NPPD's Kearney Control Center, who monitors our transmission line breakers. It was not until that point that we were told that the SPP ordered NPPD to immediately shedload and that our breakers would be off for 30 minutes. This outage affected 1,990 meters. The outage lasted about 45 to 50 minutes. At 4:00 p.m. on Monday, with an outside temperature of minus 4 degrees, we had an emergency customer meeting and learned that NPPD could not give us notice because they didn't have any notice. We then discussed the plan for Tuesday, February 16. NPPD agreed to give us a list of breakers that would be used for the rolling blackouts to reduce load. We received this list Monday evening and the list included four groups that would be shut off one group at a time. This was helpful because we could tentatively plan for our customers when they would beginning to see the rolling blackouts. That Monday evening, we shared this information with the affected customers via robo calls and social media. On Tuesday, February 16 at 6:00 a.m., with a temperature outside of negative 26 degrees, I received an email informing us that the rolling blackouts would start at 6:00 a.m.. Butler's customers were in group 3, so we had advance time to notify our customers via social media. As we were preparing for the rolling blackouts to start, we started to receive calls from a different area. We figured it must be an actual outage because this breaker was not on the list from the night before. After calling NPPD's Kearney Control Center again, we were made aware that the outage was part of the rolling blackouts. Once again, we were not able to notify our customers prior to the blackout because the breaker was not on the list that we were given the night before. Come to find out, SPP had changed the plan on NPPD, and NPPD needed to shed four times the load that was first thought. This outage affected 1,621 meters. This outage lasted one hour and twenty-- and twenty-- one hour and 20 minutes. At 11:30 a.m. February 16 at 16 degrees-- negative 16 degrees outside, we had another emergency customer meeting and made plans for the Wednesday's blackouts if they were needed. Wednesday, February 17 came around and at 9:00 a.m. with a temperature of 6 degrees outside, we're finally above zero, we were prepared to follow the NPPD plan for the rolling blackouts in the same areas as the previous two days. Fortunately, we did not have to put that plan in place. On a normal day when a Butler Public Power District customer calls in a power outage, our line crews get to work and restore their power safely and as soon as possible. On February 15 and 16, we were not able to respond to our customers needs. Our customers called in about the outages and our employees had

to sit back while they explained the circumstance. We had to wait for somebody else to restore our customers power. That is not how we want to do business, said Butler Public Power District. Thankfully, the Butler Public Power District customers were very understanding. They realized that the rolling blackouts were out of our control. Most wanted to know why we were having them. Our answer was that there was a supply and demand issue, too much load, not enough generation. The rolling blackouts were needed to keep the grid online. I will pay closer attention to the SPP energy emergency alert levels moving forward because when we heard them go to Level 3, which means that members need to implement controlled service interruptions, it wasn't long after that the rolling blackouts began. I have sat through the NPPD black start training exercise and if the entire grid would have blacked out, our customers would have been without power for days, not hours. So I understand the why, but we need to work on the how to make sure this never happens again. With the great generation portfolio that NPPD has and to think that our customers had to sit in the dark because others in the footprint have either shut down baseload generation plants, or did not have them weatherized, does not seem fair to the Butler customers. I'm sure that Nebraska Public Power District will have conversations with the Southwest Power Pool to fish-- to fix this issue so the Butler customers in the state of Nebraska never have to experience this again. Public Power is about low cost, reliable electricity. February 15th to the 17th has put some egg on our face for not being able to provide that reliable electricity. Now is the time to make sure that this story is never repeated because it will be remembered for a very long time by our customers who have put their trust in us to serve them. That completes my testimony for today and I'd be happy to answer any questions.

BOSTELMAN: Thank you, Mr. Kirby. Are there questions from the committee members? Senator Gragert.

GRAGERT: Thank you, Chairman Bostelman. Thank you for your testimony. I just have a real quick question. You're going to be-- in the future you're going to, and I'm glad to hear this, but you're going to be watching the Level 3, the blackouts, to the rolling blackouts. How much time did they-- from the time you heard Level 3 to the rolling blackouts, did they-- that actually happened? Is there a time-- and where I'm going with is there adequate time to notify your customers at that time?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

MARK KIRBY: Again, from what we were told through our emergency customer meetings with NPPD, that they literally hardly get any notice whatsoever. I think it's more of when we, in the future, when I watch that closer, when they hit that Level 3, we will definitely be putting out messaging or whatever to make sure that we're trying to get ahold of our customers. I look forward to working on some type of a communication plan that can be put into place for-- I mean, granted, I don't ever want to see this ever happen again, period. But if we're going to have to deal with this at some time, I would like to see a communication plan put in place so we could hit different points of, well, we need to put this in motion, we need to put this in motion. But-- but probably the most frustrating thing was not being able to communicate to our customers. But again, NPPD literally says they get the phone call from SPP and they need to shed load immediately.

GRAGERT: OK. Thank you.

MARK KIRBY: Thank you, Senator.

BOSTELMAN: Senator Cavanaugh.

J. CAVANAUGH: Thank you, Chairman Bostelman, and thank you for being here. In your testimony, a couple of clarifying questions. Nineteen hundred and ninety meters, that is the actual electric meter at the house or the business?

MARK KIRBY: Yes, sir.

J. CAVANAUGH: Nineteen hundred households essentially,

MARK KIRBY: It may not be households, it could be pump rates, cabins, those types of things, but it actually-- it was that number of meters.

J. CAVANAUGH: OK, I was thinking meters in terms of distance when you said it so that's--

MARK KIRBY: Oh, no, services. Sorry.

J. CAVANAUGH: And with those breakers that were turned off, is that somebody goes out and does it? Do they hit a switch and it turns off the breaker? How does that mechanically work?

MARK KIRBY: No, they can actually control them and they can actually open them up right from from Kearney-- Kearney, Nebraska.

J. CAVANAUGH: And they gave you a list of breakers they were going to turn off and then they turned off more than those. You notified the folks ahead of time of the breaker that you knew were covered by the area that planned outage, correct?

MARK KIRBY: Yes.

J. CAVANAUGH: And did they-- was there any kind of recommended action they should have taken in anticipation of the expected outage?

MARK KIRBY: Again, I don't believe so, Senator. Of what we were told is that when we actually had the list that the following morning SPP's plan had changed where NPPD needed to shed four times the amount that was actually decided on the night before.

J. CAVANAUGH: Well, I guess I'm asking from the person's perspective and you guys reached out to them with the robo calls and social media, did you tell those people to do something that they would have done that the other folks who kind of got the surprise outage didn't do?

MARK KIRBY: I would say not. They were just probably prepared whether it would be, you know, I don't know, maybe put some water in a sink or something if they needed to flush toilets, those types of things. I'm not for sure, but it was just mainly to let our customers know that they would be a part of a rolling blackout. And again, we were just trying to give them an idea of what time it would be.

J. CAVANAUGH: Thank you.

MARK KIRBY: Thank you.

BOSTELMAN: Other questions? Senator Hughes.

HUGHES: Yes, thank you, Mr. Kirby, for coming today. So tell me a little bit more about Butler Public Power. So you're just a customer of NPPD?

MARK KIRBY: Yes, we are a wholesale customer. We-- we-- we get our gener-- our electricity from NPPD.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

HUGHES: OK, does Butler Public Power own any generation along with them?

MARK KIRBY: No, we do not.

HUGHES: OK, very good. Thank you.

BOSTELMAN: Senator Groene.

GROENE: I see you're the only local Public Power District testifying. How many are there in the state? I got Dawson. I do business with Custer.

MARK KIRBY: Between 32 and 36 and some are-- some are cooperatives, not all Public Power Districts.

GROENE: To Senator Hughes's, there are a few in the state that are gone outside of NPPD and bought power. There's one up in Dakota County area, is that not true?

MARK KIRBY: I can't give you the exact name, but I know there are communities that did not sign the previous or this most recent contract--

GROENE: You know--

MARK KIRBY: --with NPPD.

GROENE: --they had rolling blackouts because they went outside of SPP supervision and they bought their power from somebody else, were they tied to these rolling blackouts of SPP?

MARK KIRBY: Senator, I would have-- I wouldn't be able to answer that question, but I'm pretty sure there's a testifier behind me that could probably answer that question for you.

GROENE: Thank you.

MARK KIRBY: Thank you.

BOSTELMAN: A couple of things. One, I did receive-- we did receive your phone calls or the texts from other public power letting us know that to expect in the next time frame, whatever that time frame, not enough time for us to prepare for that, but we did at least get a

courtesy call when we knew and when they knew of potential blackout. We did get a phone call and were texted making us aware so we could prepare for that. My question to you is on David City. Does David City supply-- they have a utility department that supplies to David City? My question is, is David City, did they get-- initially were they part of the blackouts? And if so, what-- did the hospital have any notification ahead of time or was it just shut off? And the hospital, hopefully the generators kicked on.

MARK KIRBY: The City of David City never did have to go through a blackout.

BOSTELMAN: OK.

MARK KIRBY: They have a generation plant in town, and I believe at the time they were generating for NPPD. But again, there's a testifier behind me, Senator, that could probably answer that for sure. But I know that the City of David City never did see a blackout.

BOSTELMAN: Was there any city that you supply power to or to the utility that had a hospital in it that would have been--

MARK KIRBY: No, no, Senator, we-- we did have a couple of villages that went out that had fire departments, city wells, those types of things. But no, we do not serve any village or city that has a hospital.

BOSTELMAN: OK. Do you know what the cost may be to us as rate payers? Is there going to be any change in that other than obviously I mean, if I use more electricity, I understand that, but is there going to be a rate increase for us as far as what we're going to pay, or is it just be based on usage?

MARK KIRBY: So, I've got just a little story to tell, if you don't mind. We have a larger commercial customer in Butler County that we serve. We received a phone call from that company about two weeks ago. They have a similar site down in Dodge City, Kansas. And they were made aware down there that their February power bill could be two to three times higher than any normal because of the blackout situation, the markets. We were able to reassure him that we are on a firm wholesale power contract. So, no, our-- our customers are not going to see any type of rate increase just because of the situation. Again, we

have firm-- we have a firm contract. And you are correct, Senator, you as well, you will probably see a little increase in your utility bill, but it'll be because-- because you used more kilowatt hours, so.

BOSTELMAN: Makes sense. OK. Any other questions? Senator Cavanough.

J. CAVANAUGH: Thank you, Chairman. And again, just kind of on that question, do you-- I've got a bunch of data in here, is Butler Power's usage in here? It probably is. Do you have any idea of whether on those particular days about power usage was above average or above normal?

MARK KIRBY: Yes, sir, I can-- for sure, I know that we set a new peak for the winter of about 50-- 52 megawatts. Normally we run about 46, 47.

J. CAVANAUGH: OK. And on the question about the breakers that were switched, do you have any idea of how those were identified? Was that just at random? Was it specific to parts of the service area?

MARK KIRBY: So, so I took over as the general manager March 1 of 2016, and I've really never been a part of the discussion about the list. When we learned about the list on-- on Monday night, that was the first time I had ever seen it. So, and I know that there's been some discussion about having critical load. If there's critical load on-- on a breaker, it's not supposed to be shut off. But again, I look forward to having those conversations to look at those lists and-- and for me, and Senator Bostelman might agree with this, but for me, I want to make sure-- again, I don't ever want to see this ever happen again. But if it does, I want to spread the love across my area. I don't want to have the same group of people have to see the rolling blackouts if this happen-- has to happen again. So I'm interested in having these conversations and looking at the list and seeing if we can maybe add more. I'm even interested in going out and meeting with the villages and the fire departments to find out, you know, if this would happen again, can you be without power? Can you be without power for an hour? How did the 911 center work without power, those types of things. So I'd really like to dig down into it deeper and try to spread the love if we have to do this again.

J. CAVANAUGH: So I guess what I'm hearing there is, there is a preexisting list that they kind of worked through and said this is the

first one is going to turn off and so on. Are you saying that if this were to happen again, they'd just start at that top of the list again?

MARK KIRBY: I believe, yes. They have the list and they would start at the very top.

J. CAVANAUGH: Are you aware of whether this is at the most granular level, like if they needed to shed one megawatt, they could like, you know, in terms of capacity or usage, can they pick and choose that way, or is it just we just work down the list?

MARK KIRBY: I'm not sure how they do that, but I presume it would be upon request. And again, I believe there's a testifier behind me that could probably answer that question for you, Senator.

J. CAVANAUGH: Thank you.

MARK KIRBY: Thank you very much.

BOSTELMAN: Senator Groene, do you have a question?

GROENE: Yeah, but testifier behind us. So the quest went out to every public power district in every city that there was going to be rolling blackouts, and then you decided how much your share of that rolling blackout was?

MARK KIRBY: No, Senator. NPPD actually decides because they're the ones that get the request from SPP and then it's their decision to shed the load, so--

GROENE: So--

MARK KIRBY: --that's the unfortunate part. We don't have any way of really-- we can't control.

GROENE: How did NPPD say, I'm going to shut this irrigation but the pivots weren't running, but this farmplace offered this village and not this village, they were able to do that?

MARK KIRBY: So, again, they have control over the transmission line breakers that would feed out to our substations. And I think they have an idea how much load is on each breaker. And again, it's about probably the request that NPPD gets of how much load they need to

shed. And then again, they've had a list that they go down and we have--

GROENE: So a computer program somewhere said we're going to cut 5 percent and we're going to boom, boom, boom, shut these breakers off to this line to this village and not this one or that village, and you guys have no control.

MARK KIRBY: No, we don't.

GROENE: And they don't have any control. Somebody in Oklahoma or somebody at a board has the control.

MARK KIRBY: Senator, I'd have-- I'd have a testifier behind me answer that question because I don't deal with that.

GROENE: Thank you.

MARK KIRBY: You bet.

BOSTELMAN: Senator Gragert.

GRAGERT: Thank you, Chairman. You brought up an interesting-- in one of your answers, you said that you're cost-- your costs are not going to go up to your customer. The cost is not going to go up.

MARK KIRBY: That's correct.

GRAGERT: How is that? Did you buy-- I mean, you buy electricity from NPPD or Southwest Power Pool, NPPD transfers it to you, whatever, but is that because the state of Nebraska was selling the power at that time? Or is every-- or is it just you did something right?

MARK KIRBY: Well, I think the part of-- the good part about public power is, again, we're on a firm wholesale power contract, so the rates are set starting February one. We know what we're going to pay for demand. We know what we're going to pay for-- for-- for energy. And that's what it is.

GRAGERT: For that month or--

MARK KIRBY: No, for the entire year.

GRAGERT: OK.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

MARK KIRBY: Now, if something happens-- if something happens on NPPDs end, then maybe they would come back and they would do-- maybe they would do something different. But, no, we're on a firm wholesale power contract and-- and our customers are not going to see any rate hike or anything like that because of the situation that happened. Unlike, like I said, unlike one of our customers that have a service down in Kansas, they're going to see two to three times a higher bill, so.

GRAGERT: All right. Thank you.

MARK KIRBY: They were very happy to hear that their bill wasn't going to be like that, so.

BOSTELMAN: Any other questions from committee members? Seeing none, thank you, Mr. Kirby, for coming in for your testimony. We appreciate it.

MARK KIRBY: Thank you very much. Appreciate your time. Thank you.

BOSTELMAN: Our next testifier is-- is it Mr. Wailes, is that correct? Good afternoon and thank you for being here this afternoon.

KEVIN WAILES: Good afternoon, Mr. Chairman, members of the committee. My name is Kevin Wailes, K-e-v-i-n W-a-i-l-e-s. I'm the CEO of the Lincoln Electric System. That's the municipal electric utility serving Lincoln and surrounding community. And I think it might be helpful to clarify, there is a difference obviously, between municipal electric utilities and public power districts. And, of course, the two people following me are public power districts as well, as Mark before me, but the-- what's important to note is that we are a city owned utility. We have a 9 member independent board that's appointed by the mayor and confirmed by the city council, and we're-- our board is responsible for the operations and planning for the electric utility. Now, as a part of that, we're a semi-autonomous board, and that's because there are certain things that are basically retained by the city council to have oversight over. Its budget, rates and financing. So specifically, it's kind of interesting because in our case, our board goes through hearing processes, for example, with respect to rates or budget, and they do that process and we meet with the public and then the city council does the exact same thing again as Cindy well knows because she was on the city council. And so there's actually kind of a duplicating process there. But it is quite

different than the public power districts who have elected members from around their respective service areas. So just for a little bit of clarification on that. I-- obviously we all know why we're here and what the basically the proximate cause that was, which was the weather and Mark covered that. We had record weather. You know, for us in Lincoln, it was a minus 26 and a minus 31 degrees on those two days. So that was a significant event. I don't think that I can really cover a lot of this without giving just kind of a brief overview of the Southwest Power Pool itself. Now, there's going to be two-- two people behind me that are going to give a lot more detail with respect to that, specifically Tom Kent and Lanny Nickell, and all of us that are members of SPP have many of our staff engaged in the SPP committees and activities as a stakeholder organization, so there's a lot of engagement. It so happens that from between Tom and Tim, Tom has much more experience with respect to direct engagement. He's on the members committee of SPP, so we thought he can cover the detail. But quickly, want to just talk about the fact that the Southwest Power Pool, or SPP, as the regional transmission-- transmission organization and it serves basically a 14 state area ranging from in effect Canada down to Texas in the central part, and it's in the Eastern Interconnect. And I think Lanny will go through that a little bit, that there's three major grids in North America and they're the eastern grid, the western grid and Texas. And we've all heard quite a bit about Texas recently, but that is kind of the layout. And then there's many different RTOs, for example, or several RTOs within those respective interconnect areas. The responsibilities that we'll be talking about today that primarily are reflected in this event for SPP are-- they're basically a balancing authority. They balance the generation in the load. They have reliability coordination responsibility. That's to keep the grid stable, make sure the lights stay on, and they have a-- a market operations. In other words, that's the buying and selling of power. In our particular case, we obviously-- those of us that are members sell all of the power from our generation into SPP and we buy all of our power back out to sell to our-- our load. Now, as part of that process, there's a market and a day ahead market and real time market and all those complexities that you may hear about later. But those are all functions that are critical for SPP to run, in effect, the grid. Now, they're mandated to do this through the Federal Energy Regulatory Commission or we refer to as FERC, if you've heard that term. And then they are also have oversight for reliability by the North American Electric Reliability Corporation. And I bring that up

because the North American Electric Reliability Corporation actually started back in the '60s with the New York blackouts in that time frame. And then if you recall, the blackouts that happened in the northeast in 2003 where there were 60 million customers affected, is when basically the Federal Trade Commission went through and through legislation ended up making basically mandatory reliability rules. Those mandatory reliability rules are extensive. They cover all of us, their SPP members, and they certainly cover SPP as well. But one of the key issues then is if you don't meet one of those-- some of those standards, you're subject to a million dollar a day penalty. And I give that as an example, because if, in fact, we did not comply with what SPPs instructions to keep the grid stable, we'd be subject to significant fines, notwithstanding our obligation to make sure we keep the grid stable and keep the lights on for our customers. There are basically four different kinds of levels that Mark referred to, the energy emergency alert. There are basically a conserved operations and then SPP has-- which SPP can declare, and then there's the energy emergency alert 1, 2, and 3. Now the consertive operations basically is something that SPP says, there's stuff going on and we need to be careful and watch, and they let everybody know that they're in conserved operations, that there could be things that might impact reliability grid. By the same token, the energy emergency alerts are basically the three steps that get you to concerns that things are getting obviously worse. And in the case of basically the-- the energy emergency 1 is basically saying all generations in use, the second level said we're issuing basically doing some load control, demand management but things we're-- we're at risk of losing, having to meet our operating reserves. And the energy, E-- EEA 3, it's basically saying there's some imminent-- it's imminent that we're going to have to interrupt load in order to keep the grid stable and meet our operating reserves. So, and those operating reserves basically are something that the grid has to have in the event, for example, something else bad happens. Let's say another large unit goes down. If you're using all of your generation and then one of them goes down, the likelihood is the grid itself will collapse. So you're talking about 14 states have power outage. So that's the kind of balance that has to come along in critical operations. For LES on Tuesday, SPP had identified that they were in conservative operations. This is Tuesday, February 9. And then on Thursday, February 11, we were notified that they were going to do a reliability unit commitment on all of our resources. So in effect, that meant that they were not doing market

anymore, but there was a reliability issue and they needed to make sure regardless of what the costs were for us to run the generation, they had to do it. We noted-- we basically saw on Friday that gas prices went very high. Normally for us they're running $2.50 or $3.00. They were going to $150.00 to $300. And so we decided we better look at getting our-- look at our inventories of fuel oil and see if we could get more fuel oil. That ended up having some challenges because there were delivery issues. We would have never thought of this, but there were drivers who had been working so long that they were exceeding their hours. And so we were basically working through those issues as well. They were looking at getting exceptions from the Governor to be able to deliver oil. We had oil, I should say, we had oil and stock. We do have dual-field units, which is one of those things we do for reliability. And those are all within the footprint, but obviously, gas was so high and the potential availability were challenging. We have firm natural gas contracts, but not enough to run every unit we have. On Saturday, I was talking to our staff, we decided that we'd start putting out voluntary conservation messages for our-- for our customers because we could tell with the weather and what was happening that we really should be giving people a heads up, both with respect to them being able to impact their own consumption and their own bill, but also for the potential of the grid becoming more loaded and the fact that we wanted to try to keep, you know, as much-- much load off the system as we could. At that same time, Tim, Tom and I were in communication about-- I wanted to make sure they knew we were doing it, our staff and talking to their staff, that we were putting out conservation messages. We didn't want that to be a surprise because it had not been officially requested by SPP at the time. In term, we were talking about, you know, fuel deliveries and some different things between us as well to share kind of what was going on to make sure we were all aware of what kind of measures we were taking. On Sunday the 14th, we continued conser-- LES continued conservation messages. And then that evening, basically SPP had indicated they were saying that we needed to put conservation messages out. On Monday, and I won't go through all the times, and you may hear that and they're also in your-- in your handouts with respect to the summary of the event. But in effect, we went through the 1, 2 and 3. As Mark said, we got to that point where we were notified about-- little afternoon that we needed to interrupt 10 megawatts. Now, I know, forgive me, I know we're always-- we refer to all sorts of acronyms and megawatts and all those things, let me try to talk just a

minute. And many of you probably know this already, but a megawatts is a thousand kilowatts. And if you're trying to figure out what that really means, if you think about, let's say, a Walmart. Walmart is probably like maybe 800 kW, if it's a big one. You know, different box stores, maybe 500 to 800 kW, so they're a little less than a megawatt. A customer is probably-- an average customer, maybe three and a half kilowatts. And so there'd be roughly average customers, maybe 300 per megawatt to give you just kind of an idea of what it meant. So we were-- we were asked to interrupt 10 megawatts. We did that. We got through basically one and a half cycles of doing that. And interestingly enough, the first area that interrupted happened to be my house. And oddly enough, the guy who was making the decisions about which areas go out, but as we went through that, we recovered that in a little less than an hour from that process. So that was the first time we had done basically intentional load interruptions in LES's service areas. I think the only other time was in 2004, as I understand it, predates me. And that was during the summer and after a storm it basically in covering the system back. After that, we all kind of huddled up and said, you know, we have this plan and that's what we use to make this. We have a plan, we practice it, we review it. A part of that plan you go through and look at the loads that are being served by different circuits, which can interrupt how much loads on them. You make sure you don't have circuits that have hospitals and critical facilities, water pumping, that type of thing. And we go through that process every year, but we realized when we started deploying this and being concerned that there actually are some loads that were added to our system that we really hadn't anticipated. Surgical centers and things like that. So there was a lot of-- basically work that we were doing through our account reps and calling customers and checking with them on that process. And it kind of woke everybody up from the customer base when you had interruptions as well. So we were having conversations with a number of our large customers. Many of them were saying, do you want us to curtail production? What can we do to do different things and having discussions about their critical operations and what we could do to manage those interruptions with them. That night, basically Monday night, we said, you know, we need to do a better job. We're having a hard time communicating and letting the customers know because this comes around so quickly. And then we can't really-- how do we tell them who's going to be next and make sure we get that communication out? So we-- our staff actually developed an application on our outage

map so that we could color in the areas that were being interrupted and then show what the next area would be so that if we did it the next day, we'd be-- be ready to be able to deploy that, guide our customers to our outage map, and they'd be able to get a good idea of what was happening at that point. We, too, anticipated the design that we were looking through the first few tranches of who we'd be interrupting, thought it would be the same interruption level as we experienced on Monday. On Tuesday when we got out of applying for lead to interrupt, it was a little before 7:00 a.m. and it was twice the amount that we'd done the night before. And of course, that ate up the first parts we'd plan for and then basically 20 minutes later that was doubled. So we were basically eating out everything we planned, the prior night had been actually used up in those. And so, however, that outage map proactively doing that, we don't currently have the information to be able to proactively reach our customers or social media. We have 145,000 customers and it's a-- it's a tough job to do that. We're currently developing the protocols to do that through-- through basically a new web portal as well. You know, when we went through the process, some of the things that we learned about that and it's unique to the situation we're in right now as, for example, we had people calling us saying we have vaccines. We can't-- we can't have operation, you know, interruptions. We also reached out. We have a number of our larger customers that have on site generation. We have relationships with them where we can request that they run it and we will pay them a premium to do that, to reduce load. And we had a number of those customers doing that. Actually, we took about 27 megawatts off the customer during the following peak periods on Tuesday-- on Monday afternoon and Tuesday morning and Tuesday later afternoon in order to provide that load relief upon basically for grid as well. And that actually went very well. The customers actually come out very well financially with respect to doing that. They're doing us a favor. We're very grateful they do that. But we were having lots of good conversations with our customers about this. And actually they understood that we were doing something that needed-- basically needed to protect the stability of the grid. All of us go through-- I guess I should have identified. I don't if I identified. Ultimately we had 43,000 customers that were impacted on the Tuesday interruptions. That was over about a three and a half hour period. So we were doing about 38 megawatts at a time. So it gives you an idea of kind of probably 8,000 customers or so at a time experiencing that. All of us when we go through in the industry when we go through events like this, do

after action assessments and take a look and see how could we do it better. You know, the-- not only do we do it, but in this particular case, there's lots of people doing it. And the Federal Energy Regulatory Commission is going to be doing that in concert with the North American Electric Reliability Corporation. Obviously, a lot of their focus is going to be on Texas, but it's going to be looking at SPP too. The Southwest Power Pool has set up several different groups and I'm sure Lanny will talk about that to go through investigations in different parts of what happened. All of those with that intent to try and make sure if it ever happens again, how do we-- how do we deal with it better? Hopefully, to prevent it happening, but how do we do it better? And of course, internally for us, as we talked about, we-- we have enhanced communications as an issue. We want to make sure that we're addressing that. We're looking at all sides. For us that includes the power production side, although all of our units ran and during this period of time we were generating more than our loads and everything ran, but we had different things that occurred. You have to remember that this is a cold time frame where if you took a hot cup of coffee and you threw it up in the air, it freezes. So when you have instrument lines, all these things, the power plants, there's a-- there's a real dynamic to that, that as hard as you try to do to protect what, you know, and weatherize things. You know, I think that-- that one of the things is we-- we go through all these reviews is it-- it's not just one area. It's the customer service side, its production side, it's how we do the interruptions, how do we do that better. And those reviews will be ongoing. We all prioritize safety, reliability and financial responsibility to our customers. You know, when we sit back to this, I know there have been a lot of issues that have come out there and talking about, well, how can SPP do this? And we have somebody, you know, in Arkansas that's telling us what to do. This is really kind of a form of insurance. It could be us that's having the problem and other states are having to reduce their load in order to help us say that things don't always operate perfectly. We all try to do everything we can to make sure that happens. And, you know, I believe the state did a great job, but we have to remember that there are other times that we get other benefits with respect to being in a larger group so that we can-- we can pull together. It's not unlike in the agricultural community, if you have someone that gets ill and they can't get the crops out, you have their neighbors helping him. Well, that's impacting them and not being able to get theirs out and maybe risking bad weather to get them out. This is kind

of a similar kind of thing that, you know, it's-- it's an item that, yes, we had some inconvenience for customers and apologize for that. But, in fact, it is good for the grid to make sure that we've got a way to make sure we keep it stable and not repeat the events that have happened in other areas in the past, whether it's California, Texas or-- or the northeast. And I guess the final thing is, one of the things that we as I talked about doing reliability, you know, we spent a lot of money not only keeping units and buying units that are dual fuel, which takes more to maintain, it cost more to build them so we can take care of events like that. We do the same thing on our systems with respect to transmission distribution. If you look at our budgets, there's lots of things in there that are dealing with everything from aging infrastructure to all those kinds of issues. So a lot of times take exception to this. We have an antiquated grid. It's only antiquated if you don't maintain it right and do replacements appropriately as we go forward. So I guess the one last-- one of last things I'd like to comment on is the issue with respect to reliability. There's lots of metrics out there that we all use. One of them is basically called system average interruption duration index. That means how long during the year is your average customer out of power? We have an exceptionally low number for that. Our five-year average is 21 minutes in normal weather and 48 minutes total because you look at it both ways. This particular event actually cost us 15 minutes of that, which is a huge number. But more importantly, when I'm talking about where-- where we've historically been 21 minutes and 48 minutes, nationally that number is 120 minutes and 250 minutes. So we're way below that and our customers in having this additional 15 minutes, it was not good and we don't like it. We want to prevent it the extent we can, but we're far from being even anywhere near to what the national average ends up being with respect to that data. So hopefully I got that in quickly and maybe shortly we can all go out and enjoy the nice weather.

BOSTELMAN: OK, what questions, do we have? Senator Moser.

MOSER: Is your maximum load generally in the winter or the summer?

KEVIN WAILES: It's a good question. Senator. Usually we're a summer peaking utility and we still are. Our summer peak is 780 mega-- 886 megawatts, I believe is what our summer peak. We hit 624, which is a new winter peak for us. It's actually a new peak for February and a new winter peak, so.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

MOSER: And normally our districts try to keep 12 percent or so reserve.

KEVIN WAILES: 12 percent for planning reserves. That's different. The operating reserves are carried differently. The operating reserves, and I'm sure Lanny can go through this, are basically looking at what-- what happens if the largest unit and the next half of the next largest unit actually go off the system instrument.

MOSER: OK, and-- but generating power is instantaneous.

KEVIN WAILES: That's correct,

MOSER: And so you can't, I mean, you can ramp up or down your generation if you have lower load or more load, but it gets to the point where you can't-- you can't bear any anymore load, and then if-- if you don't shed load the whole thing could go down.

KEVIN WAILES: Correct. If there's not enough resources to supply, yes.

MOSER: Could there be damage to the system that would take like days to repair if you had a big--

KEVIN WAILES: Well, if you taught-- it all depends on what kind of event it was. Clearly, if, you know, we have lots of equipment on the systems to protect the system. There's all sorts of different constraints and how you would do that. It's more an issue that if-- if you had a cascading event that collapsed the system, as Mark referred to, it's more the issue of having to try to come up with basically having any units running, because if everything got knocked off, then you've got to start bring-- basic a stage in bringing units and starting to add load and it's a long process.

MOSER: You might have to cut things apart a little bit so that you'd come back on in stages so you don't blow up something.

KEVIN WAILES: Absolutely. Certainly a way of looking at it and that is kind of what you do when you start putting it out. We would actually, well, there's a long-- long process in order if it got that bad. But that is obviously something that we all try to avoid, whether it's, you know, happening within-- in our immediate area or a broader network.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

MOSER: Thank you.

KEVIN WAILES: Thank you,

BOSTELMAN: Senator Groene.

GROENE: Thank you, Chairman. Do you have capacity, production capacity to service your customers?

KEVIN WAILES: Yes, sir.

GROENE: What's the makeup?

KEVIN WAILES: On a nameplate basis? And I'll explain that in a minute. We have--

GROENE: I understand. We understand anyway.

KEVIN WAILES: OK, OK. We have about-- about 30 percent of our-- our resources are coal and about 35 percent renewable and 35 percent natural gas.

GROENE: You said something about fuel. You said diesel fuel that you-- the truckers couldn't truck. They weren't trucking natural gas.

KEVIN WAILES: Right, and all of our natural gas units are dual fuel units, so we can run them on fuel oil.

GROENE: So when the natural gas froze up or a shortage or the price went up so much, to keep your costs down, you brought--

KEVIN WAILES: Absolutely. Most-- most of the time it's because you can't get natural gas. In this particular, although it's odd, in this particular event, fuel oil was much cheaper.

GROENE: So you made that decision.

KEVIN WAILES: And because of availability, so we had one unit we kept on gas because we have firm can-- gas contracts with the--

GROENE: How much did you say was wind?

KEVIN WAILES: About 35 percent.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: What's the long range goal of LPS?

KEVIN WAILES: Well, right now we are probably pretty much at the top of what we would have for wind, but we're looking at other renewable resources potentially as well.

GROENE: Such as?

KEVIN WAILES: Such as solar.

GROENE: What was your wind output during this crisis, the 48 hours or 72 hours?

KEVIN WAILES: If you look over the-- the two days, the wind production, I think averaged around 13 percent and it's in this data. I'd have to look it up exactly.

GROENE: So if that was 13 percent, you still had enough capacity with coal and natural gas--

KEVIN WAILES: Yes, sir.

GROENE: --to service your customers during that time?

KEVIN WAILES: Yes, sir, and--

GROENE: So you were a net exporter yet?

KEVIN WAILES: We were. The entire state was exporting at that time.

GROENE: I understand, but you were and OPS was--

KEVIN WAILES: Yes.

GROENE: --and OPS and NPPD all were exporting.

KEVIN WAILES: Yes.

GROENE: Do you know what happened in Iowa during this?

KEVIN WAILES: I-- you know, I've read a little bit about some high prices they experienced, but I-- I-- I don't know for sure, but Iowa would be in-- part of MISO was-- is going-- in the southern part of MISO, which is for-- probably Iowa was in. They were having similar

kinds of constraint issues, but I'm not familiar exactly what happened.

GROENE: Here it is.

KEVIN WAILES: And to be fair, one of this is still being investigated all over the country.

GROENE: Well, I just know Iowa has to shoot for 100 percent wind. I just wondered how they fared--

KEVIN WAILES: Yeah.

GROENE: --with that kind of decision making. Thank you.

KEVIN WAILES: Thank you.

BOSTELMAN: Senator Moser.

MOSER: Do you have contracts to purchase power on the wholesale basis that protect you when you get into these squeezes? I assume that the crazy increases in energy costs during the emergency was because people were trying to ration the use of natural gas or rationing the use of-- of, you know, oil, whatever people are using. But do you hedge and buy gas on a price guaranteed market or do you just go with the market and--

KEVIN WAILES: We have firm natural gas to protect ourselves from that, but we used to have a very aggressive hedging program when we were a balancing authority ourselves. But we no longer hedge our natural gas because the markets, in effect, typically are quite stable. In this particular case, this is, you know, kind of an exception. But as we've done an evaluation of what happens because of the way we sell in the market, if natural gas prices go up and we're buying-- we're selling into the market and buying things back out there, it's kind of an automatic hedge to some extent, so.

MOSER: So your power is worth more in the emergency anyway, so you own that yourself. So you're kind of self-hedged, so to speak.

KEVIN WAILES: That's correct. And that's-- and that's why, you know, when the reference comes up about the price impact on our customers, although we don't know for sure yet, we believe because of our

generation portfolio and selling into the market and buying back out, that we're going to come out roughly on a break-even basis. You know, through this event, but that's because we have a lot of resources, you know, we have a significant corporate portfolio as well that we were selling in, and those prices, of course, didn't fluctuate.

MOSER: And if you-- and if you hedged your gas, you're going to pay a little more all the time--

KEVIN WAILES: Correct.

MOSER: --to protect yourself from some crazy event.

KEVIN WAILES: Absolutely.

MOSER: And if you cannot have to hedge it, your customers benefit because they don't pay so much for natural gas?

KEVIN WAILES: Exactly. And it took us a while in getting into the market realized we needed to stop hedging because it wasn't-- wasn't giving us a financial advantage.

MOSER: OK, thank you.

BOSTELMAN: Senator Cavanaugh.

J. CAVANAUGH: Thank you, Chairman Bostelman, and thank you, Mr. Wailes, for being here. Just to kind of put a point on what Senator Groene was asking, you kind of gave us these charts about what your production was. And I see on February 9th, your coal was 73 percent and your wind was 2 percent. And then you go, it kind of resolved, you know, more or less consistent on that 70 percent on the 10th to coal, 6 percent for wind. Up to the 16th, there's 12 percent for wind, 47 percent for coal, 36 percent for the gas and oil. I'm guessing that the coal goes down in percentage and the gas and oil goes up because that's your peaking generation is gas and oil.

KEVIN WAILES: Typically, yes, gas is one of those.

J. CAVANAUGH: So what's the explanation for why the wind production or a share went up 10 percent of those 10 days, essentially?

KEVIN WAILES: And can you tell me what chart you're on?

J. CAVANAUGH: Don't have page numbers, but I guess it's LES.

KEVIN WAILES: Which tab?

J. CAVANAUGH: It's in section number three of the packet.

KEVIN WAILES: OK. First of all, with respect to wind, basically wind is, you know, a-- run always resource. So if it's running, it's producing. If it's not, you know, if you-- for us, if you look at our wind portfolio, actually it has 100 megawatts in Oklahoma, 100 megawatts in Kansas and roughly 100 megawatts in Nebraska. When we did those, it was really driven by price because we-- when we went out to RFP and when we put those portfolio together, it was $450 million cheaper for us over the lifetime to to actually put, for example, the Oklahoma-Kansas wind in that portfolio. What we learned, we also did it because it's going to different price nodes and SPP, so it's a little bit of another hedge, for example. But in addition to that, we looked at the geographic diversity. And it's interesting when we look at this event, you can see the diversity in that there was some days that across this event that one of the wind projects was doing an 80 percent and the other two were doing zero or vice versa. It actually rolled through the event with respect to when the wind was. So it's really, you know, it's-- it's basically our wind runs when there's wind to run it, so.

J. CAVANAUGH: I guess to just put a point on the question, though, is, were you getting a decrease in production out of wind that-- from what you would be expecting at this time?

KEVIN WAILES: I think the answer to that is yes. Sometimes, a no sometimes. What happened is, is if you looked at it, you know, there's a certain amount of wind. You have an accreditation, a firm power associated with wind. So hypothetically, with a couple of our wind projects they're-- like one of them is 100 megawatts, and it's a credit for 13 or 14 megawatts. That's what you could count for megawatts in our-- basically in our meeting, our reserve requirement with SPP. On the other hand, we have one of our wind projects, 100 megawatts. And I think it's accredited to close to 60 megawatts because it happens to produce at a much different level. During this time frame if you looked at particularly the interruption periods that we went through and looking at this event, I believe roughly it was a third of the time the-- the wind projects were individually that they

were making their accredited capacity and some case-- in one case way above it. But it's-- it's-- so it was only part of the time that they were actually even meeting their credit capacity. So it was-- it was an odd, obviously odd event. But that's also why you don't get credit for 100 megawatts and you only get credit for 13 megawatts, so.

BOSTELMAN: Senator Groene.

KEVIN WAILES: And we-- and we plan for that obviously, so.

GROENE: Well, remind me again, your-- your total production, if everything was running to efficiency, your nameplate, coal is what?

KEVIN WAILES: About 30 percent.

GROENE: All your charge has it at 50 to-- you relied on it pretty heavily, didn't you?

KEVIN WAILES: Well, that's what it's generating. That's not necessarily--

GROENE: Nameplate.

KEVIN WAILES: Right.

GROENE: But in a heated crisis--

KEVIN WAILES: I'm sorry.

GROENE: In a heated crisis, coal pulled you out.

KEVIN WAILES: Absolutely.

GROENE: Did you have any long-range plans or members of your city council who thinks we ought to-- you ought to convert coal to natural gas like the other plants?

KEVIN WAILES: We have a zero carbon-- net zero carbon goal for 2040 either-- were just adopted in December of last year. And so that's the target is--

GROENE: To get rid of coal.

KEVIN WAILES: Pardon me.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: Get rid of coal.

KEVIN WAILES: Or find some way to mitigate it with respect to, you know, for example, carbon sequestration

GROENE: So you're going to put it-- maybe you could buy Fort Calhoun or whatever from OP and put a nuclear plant.

KEVIN WAILES: Well--

GROENE: Do you think this might change some minds, this crisis about reliability?

KEVIN WAILES: I'm sorry.

GROENE: Do you think this might change some minds on your board about reliability?

KEVIN WAILES: Well, you know, we had a discussion with the board a few days following this. We had our-- our monthly board meeting and one of the things that, you know, we made sure everyone understood was what, you know, what basically the production was. The challenge during most of this event, roughly 85 percent of our energy was provided by coal and natural gas. That does not make renewables a bad thing, but it just recognizes that if we've got a target where we're trying to get to this net zero carbon in the future, we've got to figure out how are we going to make up that 85 percent and do that with a-- and keep the system reliable at that time.

GROENE: Did you recommend to them they maybe wait first, not to try to get with their policy ahead of what science is capable of doing?

KEVIN WAILES: We had a lot of discussions about all of the issues. We went through about a one-year process of making sure our board understood the dynamics of the markets, the technology, reliability issues at that time before them.

GROENE: Thank you.

BOSTELMAN: Senator Gragert.

GRAGERT: Thank you. Thank your for your testimony. Earlier with Mr. Kirby, it was mentioned that they don't have the ability to choose what switches get flipped and what power goes off.

KEVIN WAILES: Yes, sir.

GRAGERT: Within the city, do you have that capability of what part of the city will be shut down first? And then I guess where I'm going with this, does it come into play then where the hospitals are located so what part of the city you're going to shut down?

KEVIN WAILES: Absolutely. And the hospitals are on circuits that we would not interrupt unless it was some extreme kind of, you know, intentionally interrupt, I should say. And of course, the hospitals also have a full suite of backup power. They were also, in some cases, generating for us during this event at our request. But that's not mandatory for them to do that. We have the agreements. They can choose whether they want to do it or not, because there's a pretty attractive financial incentive to do that as well.

GRAGERT: So I imagine your city is broke up into many circuits.

KEVIN WAILES: Yes, sir.

GRAGERT: How many? I mean, what percent would a hospital come and play on that?

KEVIN WAILES: If you-- if you're thinking about the percentage, I mean, if you look at all of Bryan Medical's campuses being the largest hospital, I think they're-- they're in our top 10 largest customers. And so on a percentage basis, they may be 2 or 3 percent, they're pretty large.

GRAGERT: And then I'll just follow on down like we do with first responders and everything else, what comes into play? Rest homes where--where maybe people might be that, you know, their own oxygen. You got that in your emergency plan or can you do that?

KEVIN WAILES: Yes. I mean, clearly, critical loads include everything from critical municipal services, you know, water pumping, the sewer system. There's lots of things go to that. But as I said in the review, that's actually one of the things we're going to go back and look. As you all know in the last several years, one of the things

happened is they had in a surgical-- kind of surgical hospital, a smaller outpatient types of things. So there's a variety of things that we want to go back and look that as we've done these plans, we always look at the big sources that are critical loads that we might not have kind of ascertained where all of the other ones are. So that's just a part of our review process. But it was also part of the decision making process we were trying to make dynamically when we figured that out. The review, interestingly enough, that we typically do in this plan is in May of every year and so that would be coming up. Normally, it would, but I think, like all things, once you get into experiencing an event, you learn a lot. You say, gee whiz, you know, and I will tell you, we had a pandemic plan too. I think it went out the window sometime in early March because it just was not truly functioning for all we had to do. There was a lot more to it and a much more complex than we were anticipated.

GRAGERT: Thanks a lot.

KEVIN WAILES: Thank you.

BOSTELMAN: So is there any entity other than LES that can interrupt up power to LES customers?

KEVIN WAILES: I'm sorry, sir.

BOSTELMAN: Is there any other entity that can interrupt power to your customers other than LES?

KEVIN WAILES: Not that I'm aware of.

BOSTELMAN: And then how long do you have to shed load after receiving an order from SPP?

KEVIN WAILES: It's VBD.

BOSTELMAN: There's a-- there's a-- I think there's two questions there.

KEVIN WAILES: Yes.

BOSTELMAN: One, is what did you actually experience initially? And then after that initial, I think, request for shed power immediately, what's a normal course of protocol?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

KEVIN WAILES: Well, for us, obviously, once we get it, we do have, you know, we're going to do that immediately. Our folks, first of all, nobody knows for sure how much the interruption might be, so that's the first thing. And you have all these circuits listed that are eligible to be interrupted because some of them can't be, either for various reasons. And you have how much load is on those circuits during a peak condition and you take a look and find a combination. Now, our folks basically try not to hit-- obviously, you cycle through, but you try not to hit one part of the community more than another. So you basically try to spread that around. And the staff basically looks at how much load do we have to interrupt and then starts allocating that out as we go. Probably going to be a question of whether, you know, I think we prefer to have-- we're small enough that we don't have to-- I guess we believe we can still have a manual element to that rather than trying to make it a computer decision, which I think has some advantages for us, you know, because we're-- we're probably roughly one-third the size of OPPD and probably one-fourth the size of NPPD. So we do have probably a little more flexibility to take that personal touch as we're doing that. It's-- it's tough when you're told to interrupt a lot of load in your system and not just say, OK, we're going to have to take these blocks and we try to make a little differentiation on that.

BOSTELMAN: So in your opinion, what can be done by SPP and member utilities to ensure this electricity-- this electricity shortage does not happen again?

KEVIN WAILES: Well, it's going to be-- you know, obviously we didn't have one in Nebraska. And so I think part of it's going to be, we don't have any discrete idea of what all of the issues that we're out of this. We can certainly speculate. It's going to be driven. A combination, certainly of the cold weather impact on units. It's going to be an impact of the cold weather impact on fuel. There's the cold weather impact on, for example, the wind resources. There's a variety of other things. So how much of that can be mitigated by, or simple issues, you know, better weatherization on units? I think that's what we're going to learn. If-- if we didn't have things to learn, we wouldn't need to have the after action reviews. And that's going to be a pretty detailed process. I do think that one of the things that everybody learned discreetly out of this is, and Mark identified that, is everybody is going to be a lot more sensitive to being-- being sure they understand that the alert process puts you at the poten-- more

real potential to that happen, depending on how dramatic the circumstances are. But it could be a summer event too. Extraordinary heat, loss of units because of things having hot weather as well. So we just all have to make sure that we're watching those things. You know, you can always build twice the amount of generation, but our customers don't want to pay for that. And so we are all trying to be prudent. So it's kind of like building extra highways because there's a rush hour and an extraordinary event and an accident that ties things up. We have to figure out how do we balance those particular resources.

BOSTELMAN: Senator Cavanaugh.

J. CAVANAUGH: Thank you, Chairman. And kind of what you're getting at there, you don't want to necessarily build more capacity than you need. Is there part of this looking at decreasing demand through efficiency? Is there any program in LES to do that?

KEVIN WAILES: Absolutely. We've got some very aggressive programs that incent all sorts of different types of efficiency processes and-- and encourage people, for example, even to distribute like solar on their houses. There's a lot of different things that we do, more high-efficiency heat pumps. We have programs to work with our industrial customers on specific things that they do with respect to being more efficient. So there's kind of a variety of programs that we've been funding for several years and promote with our customers through our account executives.

J. CAVANAUGH: That distributed generation, you mentioned that with some of those facilities that you got as producers. Is that the same thing as-- kind of like the net metering programs?

KEVIN WAILES: Not-- you mean the ones that we were paying or?

J. CAVANAUGH: Yeah.

KEVIN WAILES: No, those are not net metering. Net metering is-- is typically considered for basically small distributed generation like, you know, photovoltaic.

J. CAVANAUGH: So, but those other folks who were on site generation, they were paying--

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

KEVIN WAILES: Um-hum.

J. CAVANAUGH: --that-- is that a program, I guess, that's not really scalable, those-- it's already in place.

KEVIN WAILES: Yeah, that's more specific. These customers have that generation on site as backup for themselves. And then we basically know they have it and we're saying, would you want to run it to help us, you know, basically reduce load. Obviously, if they're running their generation and you did have to cycle through that, they'd be having their lights on at that period of time because they'd have that resource at their demand as well, so.

J. CAVANAUGH: Do you have any idea in terms of those household-based net metering folks, how this affected them?

KEVIN WAILES: I'm sorry.

J. CAVANAUGH: The household-based net metering folks do you have?

KEVIN WAILES: I don't know how many customers would have potentially been interrupted that might have PV, but in many cases, if you don't have power on, the inverters won't work and the solar won't work if you don't have power on the other side of it. So most likely that-- they probably went out of dark if they were on those as well.

J. CAVANAUGH: Thank you.

BOSTELMAN: Senator Gragert.

GRAGERT: A quick question. Yeah, when this weather was so cold and you were taking circuits offline for a half hour to an hour, I don't know, but is it a possibility to take them off with shorter durations and rotate faster like 15 minutes instead of-- especially when it's so cold and things are freezing?

KEVIN WAILES: You know, it's a good question. One of the things that-- that-- and we probably learned a little more during this event, part of that depends on what kind of heating systems people have and what the distribution of heat pumps and electric strip backup and those kinds of things. The challenge is when you take something off and it's off for 30 minutes or an hour, you get what you call cold load pickup. And that basically means, you know, in effect, if all of these houses

are off, what happens when you restore power? All of the heating systems come on full blast. If it's electric, you know, whatever the pieces are or other functions in the homes, and so you get-- you may have interrupted, hypothetically, 10 loads-- 10 megawatts of load. When you put it back in, it goes to 15. Now, it'll scale back off and go back to normal level but that takes a period of time as well. We-- actually we're doing quite a bit of data gathering about how we have to match that up to watch how we interrupt the customers. So if you only did 30 minutes and you get-- hypothetically, and then you get this, you know, this ramp up to either 20 megawatts or 15 megawatts, the cold will pick up at the same time you're needing to drop more load. You don't want to do that a bunch of times and how do you stagger it? So there's some pieces of this that there's got to be an optimum. And we thought probably it looks more like an hour for us at this point. Now, it would all depend on the kind of event and how much, but the hours seemed to work better. Customers we talked to said the comfort in their houses, the temperature only went down about three degrees during that period of time. And that was kind of a random sample of folks we talked to, so we're-- we're still balancing that. The first day we did 30 minutes on Monday and then we moved it to an hour the following day. And I think we were-- had a better time managing it that way. So all of those things come into play, you're right.

GRAGERT: Is your recommendation then for we have a power outage like this again, to shut everything off in your home, if they-- if everything goes black and for when you bring the electricity back on, or--?

KEVIN WAILES: It would be nice if people would at least shut their heating system that and-- and there are some some mechanisms. We have customers-- one of our conservation programs includes basically and I think the other utilities have as well, for example, where we can control thermostats. And so, we haven't gone to the extent of saying we would control those when-- when we bring things back. But that's something in the future that could be done as well.

GRAGERT: I guess I was asking that question more on a served-- when that service comes.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

KEVIN WAILES: Right, and that's how you could prevent it is if you-- if we could actually control it, we could then stage them back on after we restore it, so.

GRAGERT: Thank you.

KEVIN WAILES: We'll see.

BOSTELMAN: Senator Moser.

MOSER: Do you think that since the admonitions to conserve power-- well, let me rephrase that. Do you think people will react differently to requests to conserve power knowing what happened in this case? When people get a request to turn their water heater off or whatever, do you think they may be more likely to try to conserve to help?

KEVIN WAILES: I think that's likely. But I think we actually had people doing that, particularly Tuesday.

MOSER: You could see there was some--

KEVIN WAILES: It's hard to tell because when it's so cold, everything is running anyway for people. But we believe, we actually-- we believe people were responding, maybe more so on Tuesday than Monday, to your point. But-- but I think it's likely when people know that's a possibility that they might be able to help avoid that, I think there's some collective interest in doing that.

MOSER: If-- if there's surge damage to equipment that's owned by your customers, are you liable for any of that?

KEVIN WAILES: We're not. Your-- the customer should have equipment that would protect themselves, you know, protect their equipment. That's basically kind of why you have National Electric Code, for example. So, you know, in that kind of event, that's not something that we'd be responsible for because we're just shutting power off. We're not, you know, it's not a condition where they're getting bad quality power, for example.

MOSER: Well, there probably are times where there would be surges when you turn it back on, it may not come right back up to where it's supposed to be while everything is kind of coming on, so.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

KEVIN WAILES: Well, typically, when you turn the circuit on, the power is there. Now, the question ultimately might be, does it get overloaded on the circuit? But that-- the circuit would turn it back off that way, so.

MOSER: Yeah, people who have critical needs for power would typically have backup systems, though?

KEVIN WAILES: We encourage that clearly of people. I mean, in any condition, because, for example, we all know and I suspect most of us have experienced ice storms. You know, then you can be out for days because if the ice storm takes poles down, there's only so much you can get back in the air, you know, so fast. So we encourage people to make sure if they've got critical needs to make sure they've got a backup, at least for a few hours until they can figure out if they need to make other plans, you know, in order to-- to wait something out or something bad happens.

MOSER: You know, knowing that electricity is an instantaneous thing and that you have limitations in what you can do to balance your generation to load. I mean, I'm surprised you don't have more interruptions. I mean, it's-- it's kind of like the Wallenda highline, high wire act where everybody's riding their bicycle across the high wire and one guy slips or falls, you know, there are plenty of-- there's plenty of potential for something to go wrong. I think people should be prepared for it.

KEVIN WAILES: There's no utility person in this room that wants to see the power go out. Trust me. You know, it's-- we do everything and that's kind of what we spend all of our time doing, is making sure that we provide reliable power.

MOSER: Thank you.

KEVIN WAILES: Thank you.

BOSTELMAN: So you may be able to answer the next questions I have or someone can provide this to me at a later time. You mentioned ARC, FERC and SPP. I believe Nebraska joined into SPP around 2009.

KEVIN WAILES: That's correct. I came in 2010.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

BOSTELMAN: OK. Could you-- could you explain the process, the authority and the agreement with SPP?

KEVIN WAILES: I'm not sure I could explain the agreement per se, but the process I know at the time was basically OPPD, NPP and LES looked at it, jointly. Retained a consultant to basically make an assessment. There was a determination that it was $25 million annually benefit to Nebraska to joining SPP as opposed to MISO. MISO at the time had, as I recall, they did have a day ahead market that they were operating or real time market. And it was a little more advanced than where we were at the time and SPP was stepping into that. So the determination was between the benefit and the fact that we could grow with the SPP market was made-- pretty much sense when you say $25 million savings for the state on an annual basis at that time, probably be higher now. And, of course, the advantages to SPP, as I talked about, it's kind of like that insurance package, but there are other advantages we've received out of that. We would not be able to have the wind portfolio. We have, for example, at the price we have, if it were not for SPP, so there's other kinds of advantages. The backup that we get, you know, when you're a single balancing authority and you have to take a unit out for an outage, you have to go out and search for basically something to back that up. And sometimes if it happens in the summer, for example, you're going to have to pay extreme premium prices for that. But in the particular area with SPP, if we-- if we have to have a unit for an outage, we're basically just still buying from the market like we would have been while we're getting that unit repaired, which is a big advantage for our customers as well. So there's a lot of different advantages that come from all of that. The decision making process itself to join then was made by those respective utilities through basically the-- the-- the local control process of the governing bodies. But it wouldn't be practical for one of us to have held out, for example, and basically bring the rest of the state with it.

BOSTELMAN: So did I understand-- hear you right. That their-- the decision between MISO and SPP really hinged a little bit upon the incentive of $35 million.

KEVIN WAILES: That was-- that was a significant daniel-- annual savings that was projected by the consultant as well as, like I said, the fact that they were more advanced and further market was and we

would have been stepping into something that was already in place rather than growing.

BOSTELMAN: So it really was-- so that really hinged upon natural gas prices at the time.

KEVIN WAILES: I would guess so. I mean, if you look at the time frame, it's likely.

BOSTELMAN: Was there any requirements that the pump-- that the public power districts consult with the Power Review Board or any other entity before making their decision?

KEVIN WAILES: I really don't think so, but I wasn't here then and I can't tell you whether that's true or not.

BOSTELMAN: OK, and perhaps counsel can provide this information letter to-- later to give me the specific statutes so it's granting you the authority to do what you're doing. And that-- you know, if you know what it is, fine, the counsel can--

KEVIN WAILES: Yeah, I do not know it off my head. It's basically the-- our responsibilities for operating our systems.

BOSTELMAN: And then who did the study? Who is your consultant?

KEVIN WAILES: Again, I'd have to--

BOSTELMAN: OK. That's fine.

KEVIN WAILES: But we can get that and follow up with you.

BOSTELMAN: OK. It would be interesting in seeing that as well, so.

KEVIN WAILES: OK.

BOSTELMAN: Are there any other questions? Senator Wayne.

WAYNE: Has that $25 million been realized? Has there been a look back?

KEVIN WAILES: You know, I can't-- I don't-- I've not ever seen that we've gone back and tried to do an assessment between the two. And I'm not sure how easy it would be to do, but to my knowledge, no, we haven't done that.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: OK. I'm just-- well, the consultant projected $25 million per year, I would hope you would after 10 years, look back and see if we saved it or not. I mean--

KEVIN WAILES: Well, obviously, we think we've got a lot of other advantages, but we could do that. It'd be pretty challenging to try to unwind that clock as well, but.

WAYNE: Speaking of that, what-- what would be the penalty if you left SPP monetarily?

KEVIN WAILES: We'd have to calculate it. We'd have-- there's under our membership agreement, we'd have a lot of infrastructure costs we'd have to pay for as well.

WAYNE: What do you mean?

KEVIN WAILES: Basically costs that SPP incurred as a part of our membership, whether transmission facilities, for example, because it's an integrated transmission network. So we'd have, you know, a part of that process. We all collectively pay a portion of the costs associated with everything, including the SPP infrastructure, computers, all that, as well as transmission resources. So if we-- if we were to exit, there would be basically the-- the costs that we would have-- they would have incurred because of our ownership that we'd be responsible for.

WAYNE: OK, and then-- so I was flipping through the tabs-- wish I would have got this a lot sooner, but it is kind of what it is. One of the tabs that I looked at, total generation and total road and on the day that it seemed like we had it shed, we were-- we were positive, right? And I'm sorry, I had two other hearings that I just got done with, but on tab 5 when I go through all of them, it seemed like every NPPD, OPPD-- OPPD wasn't but NPPD and LES, but overall when we've got one chapter at the end, you put them all together--

KEVIN WAILES: Right.

WAYNE: --it seems like we were-- we were positive.

KEVIN WAILES: We were.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: OK. So help me explain-- help me understand why we're shedding power when we're positive, in layman's terms.

KEVIN WAILES: In layman's terms, it would be because there were other places in the SPP footprint that did not have enough resources and we're helping support them, just like if in fact, we had a problem, other parts of SPP would be helping support us.

WAYNE: So we couldn't get the energy down fast enough.

KEVIN WAILES: I'm sorry.

WAYNE: We couldn't get energy down fast enough, so we had to stop our usage to send more down, is basically what you're saying, right?

KEVIN WAILES: Yeah. SPP, now that's again will be part of the reviews that are done about how the decisions were made and review that process. But in effect, what happened in order for SPP to maintain the operating reserves they needed in order to keep the system stable so that if something happened, you know, the grid would be unstable, they had to basically have a reduction of load because there weren't sufficient resources in the entire footprint.

WAYNE: Did you guys see increased costs for natural gas and things like that?

KEVIN WAILES: Yes, we did.

WAYNE: And how are-- are those going to be passed on to the customer?

KEVIN WAILES: We discussed this earlier. We believe that because we were generating at that time that basically that serves as a hedge against these higher electricity prices. And we were using, for example, fuel oil. We used some natural gas, but we used a limit of two oils as well, which was, of course, much cheaper than natural gas was at the time. When you net all of that out, basically you're going to be basically a break-even process.

WAYNE: Do you believe that there's a-- nah, don't want to ask that.

BOSTELMAN: Senator Cavanaugh.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

J. CAVANAUGH: Thank you, Chairman. So kind of piggyback on what Senator Wayne was asking about, the reason we have shed load here is because some other SPP had a problem, right?

KEVIN WAILES: Yes.

J. CAVANAUGH: And this is a mutual aid situation?

KEVIN WAILES: Yes.

J. CAVANAUGH: And one of the benefits of being a member of SPP is that they will come to our aid when we need it.

KEVIN WAILES: Yes, sir.

J. CAVANAUGH: Are there particular examples where they have come to our aid where we would have had that problem?

KEVIN WAILES: Yes. I don't know that there's any examples of where they've done that and had to interrupt load elsewhere to do it.

J. CAVANAUGH: That was going to be my next question, so.

KEVIN WAILES: Thank you.

J. CAVANAUGH: We've received aid, but nobody else has felt the pain in the way that we're feeling the pain for helping some of us.

KEVIN WAILES: Maybe they didn't have the pain, but maybe some prices came up because they had to bring resources on that may have been more expensive than they would have been running had we kept-- you know, not had a problem. You know, a lot of that would probably be better be answered by SPP, but that would be my speculation.

J. CAVANAUGH: Thank you.

BOSTELMAN: Senator Groene.

GROENE: Theoretically, your-- your board says you want zero carbon print. You could do that today, couldn't you? You could, because your SPPD you could tell everybody you're zero, because I think I read somewhere when the wind is blowing, we have-- we have enough production to do 150 percent or so of max load when the wind is blowing. So theoretically, you could close your nuke power plant, your

coal, and you could buy wind from the SPPD to fill in the hole and say you're green.

KEVIN WAILES: No, we couldn't.

GROENE: Why not?

KEVIN WAILES: Well, because we have to keep the equivalent of our load plus 12 percent of firm capacity available to be a member of SPP and participant.

GROENE: Well, apparently somebody didn't keep that end of the bargain up.

KEVIN WAILES: And obviously that's part of the investigation. It's going to look at this. Most likely it wasn't that they didn't have it, it's they couldn't run it, for whatever reason.

GROENE: Their windmills.

KEVIN WAILES: Well, as we said, you know, the windmills only have a small amount of credit capacity. I'm speaking here because we haven't seen the definitive issues, but most likely there's natural gas units that couldn't run either because they couldn't get gas. They didn't have dual fuel.

GROENE: Did-- well, I should ask NPPD, was there a single plant in the state of Nebraska, natural gas or coal or nuclear that could not-- did not run because of coal-related issues?

KEVIN WAILES: I am not aware of it. But again, we've got the other two major generators behind me. We did not-- we ran everything we have.

GROENE: And the cold didn't affect-- and we were cold in Texas.

KEVIN WAILES: Yes, sir.

GROENE: Same plant.

KEVIN WAILES: And we-- and I'm not saying we didn't have coal on the impasse on the units we had to deal with at the time. Instrument lines freezing. Different kinds of things like that.

GROENE: But the plants ran.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

KEVIN WAILES: Correct.

GROENE: Thank you.

BOSTELMAN: OK, seeing no other questions, thank you, Mr. Wailes, for your testimony today. I appreciate you coming in.

KEVIN WAILES: Thank you.

WAYNE: Oh, shoot, I do have a question for him.

BOSTELMAN: If you don't mind, sir.

WAYNE: Now, your generation is not in the state of Nebraska, though.

KEVIN WAILES: That's correct.

WAYNE: So you have generation outside.

KEVIN WAILES: We do.

WAYNE: So you-- so underneath Senator Groene's question, you could just buy generation, buy a life partner like-- like-- life agreements or like you're buying-- I'm looking at your generation. You don't have to physically own the generation, you could buy it.

KEVIN WAILES: You could buy capacity.

WAYNE: Correct.

KEVIN WAILES: You could, yes, that's correct. But that, at least if you were talking about trying to meet a net carbon zero goal, that-- you couldn't just say, OK, I don't own it, I'm buying it from somebody, therefore it doesn't count. You know, it's not King's X because, you know, you would have to, but, yes, we have generation. Sicilian in-- in Iowa. We own a piece of one in Wyoming. And also we-- actually get hydro out of South Dakota, so we actually get resources out of six states.

WAYNE: Now, are all your generations entitled SPP?

KEVIN WAILES: Yes.

WAYNE: The one in Iowa is considered SPP?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

KEVIN WAILES: Well, it's on the edge, but it's in Council Bluffs, so.

WAYNE: Is it in the MISO too?

KEVIN WAILES: Yeah.

WAYNE: So you can be in both for generation?

KEVIN WAILES: I'm going to let SPP answer that question.

WAYNE: OK, thank you.

BOSTELMAN: I have one follow-up to that question, I guess. It's in here-- I could ask someone else, but were there any limitations in transmitting power to or receiving power from the SPP that you saw?

KEVIN WAILES: I'm sorry, sir.

BOSTELMAN: Were there any limitations in transmitting power to or receiving power from the SPP?

KEVIN WAILES: Not for us.

BOSTELMAN: OK.

KEVIN WAILES: There were some constraints that have been identified in the response from SPP.

BOSTELMAN: OK, thank you. I think that's all the questions we have. Thank you again.

KEVIN WAILES: I had to bring a bigger bottle of water, I guess.

BOSTELMAN: We would invite Mr. Kent. Please step forward for NPPD. Good afternoon.

TOM KENT: Good afternoon, and thank you, Chairman Bostelman, members of the Natural Resources Committee. My name is Tom Kent, T-o-m K-e-n-t. I'm the President and Chief Executive Officer of Nebraska Public Power District, have over 30 years experience in the electric utility industry. I'm a registered professional electrical engineer in the state of Nebraska. I serve on the Southwest Power Pool Members Committee, which sits in an advisory role with the Southwest Power Pool Board of Directors. I'm also currently serving as Chairman of the

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

Midwest Reliability Organization Board of Directors. So before I get into this, I wanted to talk a little bit more about the role of the Southwest Power Pool as a balancing authority and as a reliability coordinator. They are one of seven regional transmission organizations, or ISO, in the United States that's authorized to operate by the Federal Energy Regulatory Commission. And in their role as a balancing authority, which is is the-- you know, really why we're here today is to talk about kind of how this works and how it transpires. They're responsible for across their 14-state footprint keeping generation and customer load in balance on a real time basis. And so normally what happens is, is the generation comes into the market every day. We know what load is going to be in the market every day. And the operators in the systems in balancing authority keep those in balance on a real time basis. And part of the way they do that, because we don't control when people turn on a light switch or turn off a light switch, we don't control when large steel mills melt steel, or industrial plants start processes, and start-- stop processes. We have to adjust the generation and most of this happens automatically to keep that in balance, because as was pointed out in previous testimony, and I think Senator Bostelman said it himself, the-- the energy, the electricity industry doesn't have a way to store large amounts of electricity. So part of the way you do that is we keep a certain amount of generation that's available is what's called operating reserves. And as Mr. Wailes pointed out, we all have to bring with us 12 percent planning reserves to cover our load, plus those reserves. And then the operators keep some of that capability in reserve in normal. And so an example of operating reserve is we'll have a unit, maybe one of the Gerald Gentleman station units will be up and running, but not running at the top. OK, it's running a little bit off the top and that little extra room is in order for the system to automatically be able to move as a customer load moves. So that's-- that's the big role of the balancing authority is to ensure that those things happen. What we saw in this event is we got in a situation, and again, there's a lot yet to be learned. And I want to emphasize that there's going to be many, many after action reviews and Mr. Nickell will be able to provide more detail and perspective. But we saw a situation where there wasn't generation available anymore to serve the load and a lot of that, in my opinion, we have yet to learn exactly why it's related to the fact that fuel wasn't available. OK, natural gas wasn't available, wind resources, while we expected them to be lower and they were lower, they weren't-- they weren't as available as

they could have been had it been a windier day. OK? So there's a fuel security issue that I think will have to be worked on and learned about as we go on. Now, whether the fuel was unavailable because there was challenges in the natural gas supply system is yet to be learned, whether fuel was unavailable because there were generating units that weren't able to operate because of the cold weather or equipment malfunctions is yet to be learned. But we got in a situation as an industry, a very cold weather event where we weren't able to maintain that balance. And that got us here today, right? Which is something that none of us want to see. But I wanted to talk about a little bit about, you know, what we do as an industry to plan for these things and how the industry fits and works there before I get into specifics in terms of NPPD. So the SPP, as I mentioned, provides many services for its members, including operating as a balancing authority and acting as reliability coordinator. Southwest Power Pool, LES, NPPD, and OPPD and other utilities that own, operate, our usable power system are required by law to register with the North American Electric Reliability Corporation, which I'm going to probably refer to as NERC. That rolls off my tongue a lot easier than North American Electric Reliability Coordination-- Corporation, and be subject to regulation and enforcement of NERC standards for reliable operation of critical infrastructure protection of the bulk power system. The bulk power system is basically the transmission and generation system that supplies end use customers through utilities like LES and OPPD that have distribution through our distribution for our retail communities and through the distribution of our wholesale customers like Butler Power District. The Midwest Reliability Organization, as I mentioned, is one of six regional reliability organizations delegated authority by NERC for compliance, monitoring and enforcement of NERC standards. Its territory includes all of our 16 states and two Canadian provinces. The Southwest Power Pool footprint is included within the MRO's, the Midwest Reliability Organization's footprint. You're going to hear this many times. No electric utility wants to see load reduction events that occurred on February 15 and 16. NPPD and our customers, wholesale and retail, value reliable and low cost electricity. One of the reasons this load shedding event is receiving so much attention is a rarity of its occurrence. This type of event has not happened in the winter before, you know, our footprint. However, the actions taken by the operators of the Southwest Power Pool and the transmission system operators of each of Nebraska's utilities, while unprecedented, when necessary steps to prevent a much

wider spread and uncontrolled blackout. Utilities across multiple states and in other regional transmission organizations took similar steps during this weather event. Mr. Wailes pointed out blackouts that occurred in the northeast part of the United States, both in 1965 and 2003. And so that the-- the events of two weeks ago and what we saw happen in terms of how the utilities in the Southwest Power Pool responded to those events were insignificant part a result of the learnings that came from those two blackouts. Those blackouts had a lot to do with the regulatory framework and the reliability standards that have been put in place since 1965 and 2003. Utilities and grid operators such as the Southwest Power Pool are required to have emergency plans in place that provide for manual shedding of load and automatic shedding of load to prevent widespread cascading blackout of the bulk power system. These emergency plans also include a black start plan, which was referred to by Mr. Kirby for restoring the bulk power system from a blackout conditions should that be necessary. So basically we plan for an exercise annually. The what happens if the entire system blacks out? And that's a pretty significant and severe event. We do everything we can to avoid a situation where we would need to do that, where the system got so far out of balance that it would result in a large, widespread, cascading, uncontrolled blackout. The actions taken by the operators on February 15 and 16 were to ensure the balance could be restored between electricity supply and usage in a controlled fashion before automated-- automatic protection systems were initiated or an uncontrolled, widespread blackout were to occur. These actions must be taken quickly because if the situation becomes degraded enough, automatic systems will take over within minutes or seconds, depending on the severity of the mismatch with generation and usage. We-- the NPPD switched gears a little bit. We started conservative-- conservative operations on Tuesday, February 9, based on SPP's declaration for conservative operations for the entire footprint due to the expected cold weather event, high loads and the uncertainty in wind generation forecasts. What this means for us at NPPD is that we limit maintenance activities to those that are absolutely necessary to minimize operational risk to our generating plants and transmission facilities during critical times. We have a balance in generation resources that include nuclear, coal, gas, wind, solar and hydro and fuel oil. If you look on tab 15, page 24 and 25, you'll see a listing of all our resources and there are some are credited capacity. We do that so we're not dependent on one fuel source and have the flexibility that we need to operate reliably

during these types of events. On Thursday, February 11, NPPD was notified by the Southwest Power Pool that the Canaday Station near Lexington was comitted to run as a reliability unit over the next several days. So the Canaday Station is a 1950s vintage nuclear-- or natural gas plant, excuse me, rarely operates, but can be extremely valuable during high load situations and emergency situations. Plants kept for capacity for these situations, it's rarely called upon by the market. But we did begin to make preparations over the weekend to return the unit to service and the unit ran as directed from Monday, February 15, through Saturday, February 20. We also began securing fuel to run our natural gas fired generation units. Beatrice Power Station and Canaday Station are fuel oil-- are fuel oil fired units, which is Hebron, McCook and Hallam peaking units and our capacity purchase towns. We contract with 10 municipalities that own generation to use their generation in these types of situations and those municipalities did run during this. As mentioned previously, we held an emergency telephonic board meeting on Saturday, February 13, and a second one on Monday, February 15, to obtain board authority to expend additional funds to procure natural gas for Beatrice Power Station and Canaday Station. Mr. Kirby mentioned in terms of the timing, shortly before a board meeting on the 15th, we were notified by the Southwest Power Pool that they were moving into a-- a higher level of emergency-- Energy Emergency Alert Level 3. And I'll talk about those a little bit more in a second. And during that meeting, I did discuss that with our board before that meeting started. We did schedule a meeting with our customers that afternoon. And I did say to our board that, you know, they're in a situation right now across this footprint where it's possible that we could see load interruptions and we were getting prepared for that. And we, as Mr. Kirby mentioned, we had a planned meeting that afternoon to start those discussions with our customers. We-- during the time frame of that weekend getting ready for the Monday pick up on February 15, our maintenance staff completed an equipment repair to Sheldon Station Unit 2 and returned that unit to service in order to support the load pick up expected on Monday morning and the unit did run. In response to SPP declaring an Energy Emergency Alert, EEA Level 1 effective on Monday, February 15, we did issue and as Mr. Wailes mentioned, the other utilities also issued requests for energy conservation through media release to our customers and the public on Sunday, the 14th. These EEA Levels, Energy Emergency Alert Levels, Level 1, these are defined again in the NERC reliability standards, basically means that all available generation

resources are in use. And EEA Level 2 means basically that load management procedures are in effect. So if you have loads that are non-firm loads or you have customers that are non-firm loads, you would be asking them to turn their loads off at that time. And then EEA Level 3 is a firm load interruption may be imminent or in progress. On Monday, the 15th, SPP declared the first of several EEA Level 2 notices that-- that went through various phases over the several days. At 10:08 a.m. Monday, February 15, SPP issued the first of two EEA Level 3 declarations. At 12:04, NPPD operators were directed by SPP to reduce 40 megawatts of load. We use a load shed procedure, as discussed some by Mr. Wailes, and I'm sure you will hear the same from Mr. Burke, that we used to execute that directive. So it's a procedure we have in place. As I mentioned, we have these plans in place for these emergency situations where we start with OK, if we get to this point where we have to bring the system back in balance, we're going to start with this manual load shed process. And for us, we look at the customer loads we serve, and again NPPD is primarily a wholesale power provider. We operate the largest transmission system in the state. And so about two-thirds to three-quarters of our business comes from wholesale sales to other entities, and about a quarter of our business is from retail sales. So the way we manage that load is we look at the transmission system breakers that serve the load of our customers or serve our retail communities. And we try and identify those breakers and what customer loads could be critical on those breakers. And it's the same discussion that Mr. Wailes had in terms of looking for hospitals, nursing homes, those kinds of critical resource-- those critical life type of loads that you wouldn't want to interrupt if you could avoid it. So that creates a list. We have a list that had three groups of breakers in it, and that's how we go through and we try, and since we serve a very broad area in the state, a very rural area of the state, we try and move that around, spread that around, so to speak, that it doesn't hit any one area any more harder than any other area. We also have to when making that list for manual load shedding, we have to have a good understanding of the automatic protection systems that are in place that would automatically shed load should the system degrade further, because we don't want to degrade our ability to manage that through automatic protection if by opening up a breaker that was really identified for something else. So that's the process that we went through. Again, that was about 2 percent of our load. On the 16th at 16:15 a.m., we've got the second notice from SPP. At 6:44, they asked us to shed about

89 megawatts. At 7:15, they asked us to shed another 89 megawatts so that 178 megawatts again was about 8.75, 8.73 percent of our load. We did during the time have a mechanical failure of a breaker on our transmission system that impacted loads around the Broken Bow area that was unrelated to the load shedding event. But we were able to get those loads restored to our customers in about an hour. All of our generation was available and ran through the event as directed. We did have some units at times running less than full output to protect for operating reserves and manage transmission flows. We had personnel stationed at our combustion peaking turbine units, which we normally operate remotely to address emergent issues like fuel jelling in the cold weather and ensure the units operated at direct-- as directed. We did have a gas metering valve for the natural gas supply to Beatrice Station that failed on February 16. So we repaired that starting at about 3:00 a.m. and had that repaired and the unit back in service before noon that day. I'm very proud of the response of our team and the equipment of our system during this event. Our average per hour for each day we were generating between approximately 135 megawatts and 620 megawatts more than we were using for our customer load for every day between the 7th and the 20th. I would refer you to tab 5, the second to last page. You can see our little profile there. We did several cup-- customer outreach events. Mr. Kirby mentioned the many customer meetings we had. We also did two press briefings where we had a virtual press briefing that I conducted with the press. We responded over 100 media calls and interview questions from various media sources. I want to share a couple of observations quickly before I-- and knowing that we're just two weeks after the event, we have a lot to learn yet. So first off, we don't want to see these events happen. We don't want to see our customer loads be reduced, yet we do plan for these contingencies and we do have plans in place in case these contingencies happen. We have many opportunities to learn and improve, and I do want to again, state again that the operating team, the people that were managing the system, took the necessary steps to ensure that there wasn't a much more dire outcome. Our customers made very good points concerning improving communication and how we plan to prepare for emergency events, as well as how we communicate during these events. We'll be working with our customers to identify gaps and implement actions to close those gaps. The operators that operate the system need better tools, which is going to take some time and learning to implement. For example, during the coordinated load reductions, the SPP footprint was also experiencing significant

transmission congestion from high north to south flows in the footprint. So while SPP was directing load reductions to predictable power system to keep things in balance, the market engine was also asking generators in the northern part of the footprint to reduce their output to manage congestion, which is an expected and normal occurrence when you have high congestion. However, in this particular case, that's a counterproductive action. So it's an opportunity again for us to work with the SPP team, and we've already started in discussions to learn from those events and help hopefully provide better tools for all of us. You'll hear more about the next steps from Mr. Burke and Mr. Nickell, but the idea of us learning from events as an industry, doing event analysis, implementing corrective actions to prevent recurrence and to improve the situation is part of our culture. Nationally, the Federal Energy Regulatory Commission and NERC will be conducting reviews. SPP will be conducting reviews. And certainly, this hearing today and our opportunity to talk to you about the events and ask your-- answer your questions is an important step in that process of developing understanding and improving as we move forward. With that, Senator, I'd be happy to answer any questions.

BOSTELMAN: Thank you, Mr. Kent. Are there questions from the committee? Senator Groene.

GROENE: Thank you. So you need 112 percent of production to be part of SPPD, is that correct?

TOM KENT: You have 12 percent planning reserve requirements. And then, as Mr. Wailes mentioned, every day in the market we have to have the ability to-- for our load, plus the operating reserves that are needed for that day.

GROENE: What reserves does NPPD actually have for our needs in Nebraska?

TOM KENT: Well, so the reserves are part of our total mix. And so we have about 3,300 megawatts of generation roughly. So that's 15 percent or more-- more than our load requirements today or in summer months, it's right--

GROENE: So we're 15, then we need 12.

TOM KENT: Yeah.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: Prior to 2006, the grid existed, right?

TOM KENT: Yes.

GROENE: Because the feds said we have an eastern, western, and Texas, right? So you were able to sell your excess into the market.

TOM KENT: Prior to 2014 there wasn't-- there wasn't a integrated market to sell into. Prior to 2014 the way NPPD and other utilities traded with other utilities was to do what was called bilateral trading. Pick up the phone and call and say, do you need help? I need help and do those transactions. What has transpired from a market operations perspective since 2014 is a very transparent way to establish prices and let the market drive that community trading.

GROENE: Prior to joining SPPD, if you had access, you could sell.

TOM KENT: We could sell it if we could find a buyer.

GROENE: And you did, or--

TOM KENT: At times, yes.

GROENE: But did you ever have to buy?

TOM KENT: Sure, yes.

GROENE: You did. We were short sometimes.

TOM KENT: Yes, especially if we had a unit outage. So if we had Cooper Nuclear Station, for example, it's our largest single unit, about 800 megawatts. If that's in its two-year maintenance outage, we would be buying that energy prior to the market from someone else.

GROENE: Cooper isn't bigger than Gerald Gentleman.

TOM KENT: As a single unit it is. Cooper is 800 megawatt. Each of the Gerald Gentleman units, one is 700, one is 665.

GROENE: Facility--

TOM KENT: But the facility, the site, Gerald Gentleman is bigger.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: So did we ever shed before prior to have shedding an instance before being part of SPPD?

TOM KENT: So for NPPD, we had to shed load in the summer of 2012, in the middle of the night in July. It wasn't related to a lack of generation, which is what we're seeing in this event, it was related to a localized issue with us not being able to get enough energy through the transmission system. So in north central Nebraska, the summer of 2012, if you recall, was a-- was a very hot and dry summer, a lot of drought, a lot of heavy irrigation load. And what we saw that summer and this, again, goes to the reliability standards that we follow to ensure that we can prevent a widespread uncontrolled blackout.

GROENE: That was transmission problems.

TOM KENT: Yes.

GROENE: The reason you want to do the R-Line is transmission problems, right?

TOM KENT: Yes.

GROENE: Not-- has nothing to do with SPPD. It has to get Gerald Gentleman to certain areas, right?

TOM KENT: The R-Line, the R-Project has to do with improving the reliability of the transmission system, which was related to us being unable to get enough energy into north central Nebraska in the summer of 2012. It is a project that is approved through the planning process that SPP manages. That's one of the other services that they provide for their membership is they do joint planning and our-- and all the members participate. Our transmission planners participate, but they do-- joint transmission planning for the 14-state footprint.

GROENE: So when we had the ice storm, I can't remember what year it was shut down.

TOM KENT: Five, six, you know.

GROENE: Gerald Gentleman to the east.

TOM KENT: Yes.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: Why wasn't this great SPPD able to back us up from the from the east and from the south, bring power into eastern Nebraska where we shut down all those houses?

TOM KENT: So in 2005, 2006, it was before we were SPP members. At that time, we were--

GROENE: Has it been that long?

TOM KENT: Yes. Yeah, we-- at that time we were members of what was called the Mid-Continent Area Power Pool. A little bit different organization, doesn't exist anymore. But they were-- they were doing resource sharing and those kinds of things. Certainly we were leaning on utilities to the east and south as much as we could to get energy into Nebraska at that time. The challenge with the ice storm was is almost every major transmission line between western Nebraska and eastern Nebraska was laying on the ground. So even with generation available, it would have been very hard to get it here because of the transmission facilities were laying on the ground.

GROENE: Even from other SPPD members.

TOM KENT: And I-- I-- I-- you know, we could go back and look at the records, but I would guess that we were leaning on utilities to the south of us and east of us as hard as we could during that time because of the challenges we at.

GROENE: Don't have time with. If we weren't part of SPPD during this cold snap, we would have been fine.

TOM KENT: Not necessarily. We would have still, because we're part of that same interconnected grid--

GROENE: Prior to it. In 2006 production we have, we'd have been fine.

TOM KENT: We're still part of that same interconnected grid in 2006. So these issues in 2006, had there been a widespread generation store-- shortage, we would have been helping out because we're interconnected and so our generation--

GROENE: Would have helped them out, but we would have been fine. Probably had no shedding situation, you would have been able to produce enough.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: It's-- it's-- we certainly would have been producing like we are today to make that assumption and we're certainly producing more than we were using for our own load. The whole structure was different in 2006. There wasn't a consolidated balancing area. There was-- Mr. Nickell, probably has the exact number, but I think it was 19 individual balancing areas.

GROENE: Assumption. You can answer this or not. We heard the reason for SPPD was $25 million bonus. I've got a big suspicion. The reason for the SPPD is the unreliability of wind and the unreliability of when you could spread it over a bigger area. Would I be pretty correct on that?

TOM KENT: No, I would-- I would characterize it differently. Excuse me, but--

GROENE: That's fine. I just made an assumption.

TOM KENT: No, and that's fine. I'm glad we're having this discussion. The Southwest Power Pool, and I want to clarify something. It wasn't a bonus. There was-- wasn't a cash. It was an analysis that was done by the utilities in Nebraska--

GROENE: It saved us.

TOM KENT: --that saw savings, and we've realize that savings. We're able to generate surpluses for our customers for the last three years. We are returning to our customers in the form of credits on their bills because we're able to generate revenue with our resources in that market.

GROENE: But you used to be number one in the nation right there, least expensive power. You're not there anymore since SPPD. I think we're 10th, 12th, somewhere we've dropped.

TOM KENT: As a state we're 10th or 12th, yes.

GROENE: Yeah.

TOM KENT: Yeah.

GROENE: So what's the advantage to the consumer of Nebraska that we joined SPPD when we used to be number one?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: Again, I don't-- we used to be higher. I don't remember if it was number one or not. We certainly--

GROENE: We used to be number one in football, my memory is fading.

TOM KENT: I'd like to be number one in football again, but I digress. The the advantage for us is that-- I'll use an example from a balancing standpoint. We have-- let's use one of the Gerald Gentleman units and let's just assume it's a 600 megawatt unit and we have a 3,000 megawatt load. If that unit trips off for some reason, we have to figure out if it's just us by ourselves how we balance that. And that's a 20 percent issue. We do that and say the SPPs load, just to make the math easy, is 30,000 megawatts. It's actually more than that on a lot of the time. That's-- that's a-- that's a 2 percent issue. It's much easier to balance, much more efficient so we get some benefits from that for our customers. Certainly from a market standpoint, we have very low cost resources. They're called upon from the market to operate a lot. That allows us to bring excess revenue back that help keeps our rates low for our customers. That is a direct benefit for our customers. We weren't able to do that as easily, previously, because we didn't have that transparent market to operate in.

GROENE: Thank you.

TOM KENT: Yes.

BOSTELMAN: Senator Moser.

MOSER: So the interconnection between the grids occurred before we joined the Southwest Power Pool.

TOM KENT: The Eastern Interconnect has been in place for a long time. It's kind of how the whole power system developed. I'm not quite sure the date of when things solidified, but certainly that idea of having three grids that are-- that are separated, except for D.C. ties, has been around for decades.

MOSER: But if we had a big ice storm here and we couldn't generate enough power, we could get power from the other members of the power point.

TOM KENT: Definitely.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

MOSER: And the flow of electricity is much more dynamic. That's a bad term.

TOM KENT: That's a good term.

MOSER: The sale of energy between producers is more dynamic through the SPP.

TOM KENT: It's more transparent. It's like if you're in a commodities business, if you're a corn or soybean--

MOSER: Everybody knows what you're paying.

TOM KENT: Right.

MOSER: But you don't have to call somebody and say, hey, do you-- we have more power than we need, do you need some.

TOM KENT: That's right.

MOSER: It's all done through the pool.

TOM KENT: Through the pool, through the market.

MOSER: And are there times when you generate so much power that you pay to get rid of it?

TOM KENT: So there are times when the prices in the market get very low and maybe negative. The market is designed to-- to set the price based on the variable cost of production. So it's basically the cost of the fuel that's being used. So in the case of wind and solar, sometimes in-- in times of the year when the-- when the loads are low and there's a lot of wind blowing, because of the production tax credits, the starting price is zero, but sometimes that price will be negative. So certainly those prices in the market can go negative at times.

MOSER: You try to avoid that, I assume?

TOM KENT: Yes, we do. And so, Mr. Kirby, you know, I think one of the questions that came from Senator Gragert had to do with the prices, et cetera. And Mr. Kirby talked about that to me. That's one of the big advantages that we provide is public power we provide for our

customers is we-- we manage that market risk. And as-- and as Mr. Wailes pointed out, the fact that we have a diverse generation mix, it acts as a natural hedge because every day in the market we're selling our generation at whatever that market price turns out to be. And we're buying all of our load back from the market of whatever that price turns out to be. So if the prices go way up, it balances itself out. The prices are down. We have-- we have a hedge there. It's a little different. But that's-- that's something that we're able to provide for our customers in the public power model in terms of managing that risk and helping hedge those costs to provide benefit for all of our customers.

MOSER: Are you surprised we don't have more incidents where we have problems controlling our loads and we have rolling shutoffs?

TOM KENT: You know--

MOSER: To me, it's such magic that it just looks like it would be pretty difficult to manage even by smart engineers like--

TOM KENT: Other people do.

MOSER: NPPD does. Not you, but other guys, yeah. [LAUGHTER].

TOM KENT: Right.

MOSER: I don't want you to get a big head.

TOM KENT: No, thank you. I honestly, am not surprised, but I'm-- I'm also not surprised about how big of a deal this is. And it should be, right? This industry has been around for 100-plus years and most people don't think about it unless they get a bill that's higher than they wanted or unless the lights go out and they don't understand why.

MOSER: Yeah, some people had critical problems and then other people just couldn't dry their hair.

TOM KENT: Right.

MOSER: You know, and they're all annoyed, but some are more critical than others.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: But there's a lot of lessons that have been learned over the hundred years that we've been operating this industry. It's certainly more complex today than it was when it first started, because all of these utilities are interconnected. The Eastern Interconnect is literally the largest machine on the planet. And so it's taken a lot of learning, a lot of understanding, people that are a lot smarter than me to make sure that we've got the right systems and processes and controls to prevent this from happening. And when it does happen, in these rare instances, we have to take it seriously and learn from it and get better so that we're even better the next time.

MOSER: Yeah, I would just think it would be a mystery to match all those-- synchronize all those waves because 100 and-- or 60 cycles changes 120 times a second. And if you get those out of sync, it's a dead short and you'll have fireballs and molten wires and--

TOM KENT: Exactly. One of my-- one of my famous in my little world sayings, is physics always wins and that's something we can never forget because at the end of the day this is a physics problem and what we saw happen is a physics problem ultimately.

MOSER: So do you guys hedge like oil or natural gas purchases?

TOM KENT: Not like we used to for the same reasons or similar reasons that Mr. Wailes pointed out. The way the market works, we learned that wasn't really necessary anymore for how we position and bid those particular resources in the market.

MOSER: Thank you very much, I appreciate it.

BOSTELMAN: Senator Gragert.

GRAGERT: Yeah, thank you, Chair, and thank you for your testimony and hit up on quite a few of these, but I'm just wondering, of the 14 states that are in the compact, are all them capable of generating equal amounts of what-- of power or energy?

TOM KENT: They're not all capable of generating equal. Some of them will be able to generate more than we can. Some will be able to generate less than we can. But they all have to abide by the same rules, in terms of having generating capacity that covers their load requirements if they're a load-serving entity. Not all-- not all generators necessarily are load-serving entities; there may be some

generators that are independent power producers that are just generating and selling in the market.

GRAGERT: OK, so then was any of-- was any of the standby or the peak capacity that-- not in use in Nebraska here?

TOM KENT: Ours was all available to run, and ran for NPPD.

GRAGERT: And we were running.

TOM KENT: Yes, yeah. And so it was running as directed by the market. It wasn't necessarily running every hour of-- or every minute of every hour during the week, but it was running and responding to the market direction to ensure that we maintained reliability as best we could.

GRAGERT: So then in the SPP scheme of things, Nebraska, you know, and our capability of being able to produce more than what we need right now-- you know, I guess at this time or a lot of the time of the year, maybe not at all times of the year-- do we-- can we only put in limited amounts at certain times of the year into SPP? Because I know there's no big battery. You're-- you're juggling this between all the states who gets to buy it or who gets to sell and who gets to buy, right?

TOM KENT: So our-- we're a summer-peaking utility, and so our-- our resource mix is-- is designed to serve our peak load in the summer. So this time of the year we have excess that we can sell into the market; in the summer we may not. And in these types of situations, SPP is asking every generator that's capable of running to run. In-- in normal-- in a normal day, normal market conditions, the generators are selected to run based on their price, what they bid into the market. Again, it's based mainly on the fuel price. Our generators historically have fairly low fuel costs, so our generators run quite a bit in the market.

GRAGERT: So is that on a yearly basis that you sell the--

TOM KENT: It's on a daily basis.

GRAGERT: Daily basis. So, you know, we were having rollbacks, but we had excess energy we were selling, right?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: During the event on Tuesday, it appeared that we were, you know, during the time where we were going through the load reductions in order to keep everything in balance, we were also managing high congestion in the transmission system. So sometimes the transmission system gets congested. And so what's congestion mean? I-- I like to use the analogy that it's-- it's like the interstate. When the traffic gets on the interstate and you're going to the Husker football game, and you can't get off on the exit you want, you have to go to a different exit because it's congested. The transmission system can get that way where it can get loaded up. And so not-- not always will the most effective resources be available to generate at the levels they want to because of that congestion. So what we were seeing, I believe, on Tuesday-- again, more to be learned-- is we were at a situation where they were balancing the entire footprint by spreading that issue to everybody. And they were also trying to manage congestion between the northern states and the southern states, which is a-- is a-- is a-- historically, it's a tighter congestion point. And so in that situation, I think they were rolling back some generation a little bit, trying to manage that at the same time that loads were being equaled.

GRAGERT: So it had nothing to do with that we're going to shift some electricity off, be able to sell at a better price.

TOM KENT: No, not, not, not whatsoever.

GRAGERT: Can you-- when you ask people to conserve, can you-- can you trigger that right that day, that they-- that people are following up with your request?

TOM KENT: No, not for us. Again, most of our customers are our customers of other utilities like Butler Power District, right? So we certainly send out the requests. I believe-- and I think Mr. Nickell might have better information on that-- that they saw some benefit there in terms of customers' conservation. So that doesn't-- that doesn't happen the same way for us as it might for an LES or an OPPD, where they have that direct customer relationship with all their customers.

GRAGERT: Thanks a lot.

TOM KENT: Yes.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

BOSTELMAN: Senator Wayne.

WAYNE: Thank you. I thank you for being here. I have a couple of questions. I'm trying to figure all this out. So one thing, Jerry Jones supposedly made a lot of money from selling electricity during all this down in Texas. What were we selling, or what were you selling to the market and how much was it?

TOM KENT: So I think there's, in the tabs, some of the market prices. Mr. Nickell might be better-- answer that. But I think some of the day head prices were in the $3,000 range.

WAYNE: So what was your-- what was your profit during that period?

TOM KENT: Still working through that. Don't know that we had any excess margin. I expect we will again. The way the market works is, the generators are getting paid the $3,000-- let's use that as an example. The load is paying the $3,000. So for a utility like us, where we have that hedge, it balances out. So it really doesn't make a difference. It's-- it's possible and it's likely, because we were generating excess, that we'll have some-- some-- some margin, some surpluses. We have the last three years at least, which shows up in some of the refunds we give to our customers each of those three years. We just haven't finished going through the calculations. We're still waiting for some of those bills to settle, so to speak. But I would expect that we're going to be OK and maybe-- maybe be a little ahead from a margin standpoint.

WAYNE: And you mentioned that from the consultant, when you guys originally joined the SPP, that you said the savings was realized where you were or as-- were your words. How did you quantify that? And where do you-- what's your total savings amount?

TOM KENT: So we-- I won't-- we haven't gone back to-- to do that analysis that you're asking for. I think we probably could, but I-- I'm-- again, as Mr. Wailes pointed out, there's been a lot that's changed since then. It might be hard to do, but I can just tell you, just from the last three years, where we're returning revenue to our customers in the form of credits, that revenue was realized through our-- our participation in that market.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: And that-- that could have been any market. But with the-- with the-- with wind being so many days at zero, you would have got a credit anyway. So I'm just trying to make sure that the SPP is actual-- you said it was realized, so I wanted to know if there were numbers behind that, but-- but that's fine. Were there any customers in your area who did not have power for over 90 minutes?

TOM KENT: I'm not aware of it, but it's possible. We certainly, with our--

WAYNE: I'm sorry. How do you-- how are you not aware of it?

TOM KENT: Because I-- I'm not privy to that detail of information; I didn't bring it with me today. The operating team has the list of all the breakers that were open and how long they were open, so I'm not aware of-- but it was a personal statement, not an organizational statement. Certainly at NPPD we know exactly what the longest was.

WAYNE: Well, I was just--

TOM KENT: I just don't have it in front of me. But I will tell you that we strive to rotate customer outages on a 30-minute basis. We had some outages that went longer than that because of the amount of breakers that we were dealing with. Mr. Kirby mentioned that he had one breaker that was off for, I believe, an hour and 20-some minutes. I-- so I would guess that we had some that were close to that 90-minute ten-- standpoint and could have gone over.

WAYNE: Well, we are talking about negative degrees here, and an hour without electricity could really do some damage to, not just people, but livestock. And I'm trying to figure out, if you set a parameter for 30 minutes, how you would know if there were-- how you would know how many and how long those were over 30 minutes.

TOM KENT: Again, the operators do know that; I just don't have that with me. So I just want to also point out that, given the amount of breakers that we were utilizing to interrupt the 40 megawatts of load on the first day and the 178 megawatts of the load on the second day, as we rotate from one group to the next in that roughly 30-45 minute standpoint, you have to shut Group A off before you turn-- or you have to-- you have to turn off Group B before you turn on Group A, all right? So there's some time that transpires there. And we also have to

deal with occasionally-- and I'm-- I'm sure it happened-- again, I don't have the exact breakers, but we have to deal with occasionally the breakers may not close automatically when you want them to; and we have to send technicians out.

WAYNE: I see. I just--

TOM KENT: So we do have the data and we can certainly provide you that specific information if you'd like. I just don't have it with me.

WAYNE: [INAUDIBLE] and that. And so I want to talk a little bit about board versus management and how some decisions are made, because I'm really not sure. Can you give a-- like a 90-second or an elevator pitch on where is the demarcation mark between the board policy and management decision?

TOM KENT: So our board gains its authority from Nebraska statutes. They're elected publicly as you are, and they're responsible for the fiduciary oversight of our organization. So they-- they make policy, they set direction, they provide oversight. They are res-- have the authority to hire and fire the CEO and delegate the seat to the CEO, the management of the organization and management decisions of the organization. That demarcation between board policy and management direction is in our governance documents, and we can certainly share those with you. Our board also has the authority, under Nebraska statutes, to-- to set rates and be the rate-making authority for the customers-- with customers that we serve, which, as you all know, is-- is a different rate-making authority than most other states have.

WAYNE: So what if-- let's take-- we'll go to the smallest level of, let's say, legislative positions. Does the board-- does your board vote on-- on what position you'll take on legislative positions?

TOM KENT: Yes. Our board provides us direction on position on a lot of it, on the legislation.

WAYNE: Is it a principle document or is it you're being positioned?

TOM KENT: We have a-- a annual document resolution that they approve that lays out our legislative priorities and agenda. And then we also have discussions with them on specific positions.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: So what if the board decided not to shed? Do they have that authority?

TOM KENT: They do not.

WAYNE: So an elected board in Nebraska has no authority not to shed?

TOM KENT: They could direct management to do something like that. And I would-- I would humbly decline, because we have an obligation under national regulatory standards to follow the directives of the reliability coordinator.

WAYNE: So when it comes to the most important decision to keep power on or off, our-- our elected boards don't have authority anymore.

TOM KENT: Our elected boards provide the guidance and oversight, and they set an expectation that management is going to follow all the legal regulatory requirements and do the necessary things in terms of operating and maintaining the facilities to ensure reliability.

WAYNE: If we were in court, I would have asked the judge to admonish you and answer the question. But we're not, so we're-- we'll keep moving on. What is the market value of your current generation assets?

TOM KENT: What do you mean by market value?

WAYNE: If it were to be sold on the private market, what is-- what is it?

TOM KENT: I don't know. I have no idea.

WAYNE: But don't you do like bonding and other evaluations on your-- on your-- on your assets? So you never get a market analysis to figure out how much they're worth to bond against?

TOM KENT: We have the book value and we have our balance sheet, which would have our assets in it in aggregate. And I-- I don't have that with me today, but we can certainly provide it to you.

WAYNE: That'd be great. Turn to-- so we got Tab 8 and Tab--

TOM KENT: And I would add, Senator, that the book value and the value that's carried on the balance sheet is not necessarily representative of market value.

WAYNE: I would totally agree with that. So on Tab-- and I'm just trying to understand and, unfortunately, you went first, before OPPD, so he's going to get a-- a preview. But on Tab 8,--

TOM KENT: He's-- he's thanking me right now,

WAYNE: On Tab 8, in the middle, it talks about NPPD capacity factors from February 7 to February 21. So after the cold spell I saw-- I see Gentleman running at 98 percent, 100 percent. But immediately after the cold spell, it drops to 49 and 51.

TOM KENT: Yes, sir.

WAYNE: What-- what's the average in the-- in the summer or in the wintertime of those? Are they usually-- I'm sorry, let me back up. Are they usually operating that low?

TOM KENT: Not necessarily. If you go to Tab 6, on the 4th page back, you can see our annual capacity factors for Gerald Gentleman Station, Unit 1, over the last five years with 71.1 percent and Unit 2, 61.8 percent. Unit 2's capacity factor in 2020 is-- is lower. We had an immersion issue in the plant, had to-- had to take the plant out of service for a couple of months to do major [INAUDIBLE].

WAYNE: I was talking about Tab 9-- sorry, Tab 9; we're just upside down.

TOM KENT: Oh yeah, I'm sorry-- Tab 9. I apologize.

WAYNE: Yeah. It was operating at 47.8 percent but even Gentleman 1 was operating, in 2000, at 69 percent. So that means that's the average; there are some higher days and there are some lower days.

TOM KENT: That's correct.

WAYNE: And so what I'm trying to figure out-- and I've been asking this question for a while-- is, is this asset producing enough revenue to pay off the debt on it?

TOM KENT: Yes.

WAYNE: What's your projection on paying off that bond? Are you going to keep rebonding it to maintain maintenance?

TOM KENT: We develop our strategy for bonding over time. Particular to Gerald Gentleman Station, I-- I don't have a particular plan to extend the bonded debt of that station at this time, and so the current bonds would be paid off when they become due. But as we look at opportunities in the market, we certainly look at ways to refinance our debt to save money for our customers. We're in the process of doing that right now.

WAYNE: Well, the reason I'm asking is I'm looking at your 2016 and 2020, and all of them, except for one year, are operating under 70 percent capacity. So what-- what-- just to be transparent, what-- what scares me about this whole situation is the ability to turn off or on power is no longer at the local level. And we're running an asset that-- at 50 percent or less some years. And I'm just-- I'm just worried that we're not necessarily-- we might have a stranded asset out there once-- and I've said this multiple times-- once we have a-- the ability for a battery in the next five years to-- to save power from wind and solar. And if my calculations based off the last year-- we're still at about $1.3 billion of NPPD debt, and-- I could be wrong-- a significant portion of that is, is this station.

TOM KENT: Certainly a portion of it's that station, and $1.3 billion is probably in the right ballpark. I don't have the current numbers.

WAYNE: So what conversations are you having to a contingency plan that, if a battery comes online tomorrow, taxpayers aren't stuck with all of these assets?

TOM KENT: So concerning battery technology, I would agree that that's a-- a hope for the future that can make a big difference for the utility industry and-- and make a big difference in these kind of events. But the reality is, is that technology doesn't exist today in a form that is either large enough or economic enough to make a difference. And it might be years or decades off yet. Specific to our facilities and our-- and our plants, they operate very efficiently. We have regular oversight from our board and from customers as to how they operate. And we're able to generate exist-- significant revenues

to help keep our rates low for our customers from those units. The Gerald Gentleman units happen to be some of the lowest-cost generating plants in the nation.

WAYNE: And I agree. I've watched the market when I'm bored, and I-- it is-- you do a good job. So the last question I have then is relating to the outages and everything like that. Are there any-- are you-- are there any plans to review and bring-- maybe bring in a consultant to see if SPP is still the place we need to be? It's been-- it's been 10 years is why I'm asking.

TOM KENT: Sure. No, I don't have any plans to do that at this time. The Southwest Power Pool has been a good relationship for us. We've been able to get some things done that we were unable to do by ourself. We participate in a market where our units are valued and able to bring revenue back for our customers. We like, quite frankly, the governance process of the Southwest Power Pool more than we liked the governance process of some of the other RTOs that we looked at, because it's very member-driven, a lot of member engagement. As I mentioned at the beginning of my comments, I sit as a Members Committee member, as an advisory, in an advisory role to the Southwest Power Pool board. So I hear all the things I hear. I participate in their discussions and provide my input as to what I think, not just me, but all the Members Committee members: Joe Lang from OPPD also sits on the Members Committee. So Nebraska has two representatives that are on that Members Committee. We also have pretty extensive engagement throughout all of our organizations. So that governance model actually is a-- is a good thing.

WAYNE: So I have--

TOM KENT: It gives us a lot of engagement.

WAYNE: --two quick questions. So if-- if you wanted to build a line from Grand Island to North Platte, do you have to have SPP's approval to build that transmission line?

TOM KENT: Do we have to have SPP's approval to build that transmission line?

WAYNE: Can our board do it, is the question.

TOM KENT: Yes. Technically, our board could do that.

WAYNE: Without SPP's approval?

TOM KENT: That's correct. No, we would miss out on cost-sharing opportunities and those kinds of things. And we would certainly have to inform them of that and make sure that, if that line was constructed, it went through all the proper engineering evaluation processes to ensure it didn't cause a reliability problem. But our board can direct that if it made sense. Our board also has the authority to determine what generation we have and how long we have that generation. SPP makes none of those decisions.

WAYNE: And my last question-- this is truly my last question. Then what's the role of the public-- the Power Review Board?

TOM KENT: Power Review Board?

WAYNE: I'm-- I'm-- I'm confused on their role versus SPP, and it seems like when we were in isolation by ourselves, there was a role. But maybe there isn't a role anymore.

TOM KENT: No, there's-- I-- I-- there's definitely still a role for the Power Review Board, in my opinion as a utility that spends a lot of time talking to the Power Review Board. They established by the Legislature that the particular things that they do-- that is, again, similar to every other state that I'm aware of-- is they-- they ensure that public need and necessity is satisfied by any projects that we bring forward. So if we were to decide to build that transmission line in your example, we would have to go to the Power Review Board and gain their approval. And in that process, we-- the Power Review Board would ensure that it was needed, and it was necessary from a public standpoint, and it didn't duplicate existing service.

WAYNE: So--

TOM KENT: So that is a function the Power Review Board still controls.

WAYNE: The Power Review Board can stop you from generate-- from building more generation or building transmission.

TOM KENT: That's correct.

WAYNE: So-- so the light turning off and on is delegated. The-- the-- the board no longer has that authority, and then the board no longer

has the authority to build or even do transmission, because now that authority is with the Power Review Board

TOM KENT: No.

WAYNE: I'm looking at veto power, and it seems like--

TOM KENT: The board has the ability--

WAYNE: I'm not sure what they--

TOM KENT: The board retains the ability to-- to veto-- using your words-- projects that come through the Southwest Power Pool process. So our board still has that ability to say no to projects. Our board is who decides-- and our-- I will say-- Public Power Board-- it's not just specific NPPD-- has the ability to decide what generation gets built and what generation doesn't get built. They have the ability to decide what transmission gets built or doesn't get built, whether it comes through the Southwest Power Pool process or not. Our board retains that authority.

WAYNE: Thank you,

BOSTELMAN: Senator Hughes.

HUGHES: Thank you, Mr. Kent, for coming today. So can you give me some kind of a rough idea of the difference of the load? And this would probably have to be in SPP between, I'm assuming, the summer peak to the winter minimum. And what I'm getting at is that the generation-- you know, you're only utilizing 70-- 60-70 percent of the generation in NPPD. But what is the fluctuation between the high and the low through the year of SPP, just a ballpark?

TOM KENT: So I'm certain Mr. Nickell will have that number. But the rough numbers, their minimum is around 22,000 and their peak is around 50,000-55,000.

HUGHES: So more than double.

TOM KENT: More than double.

HUGHES: So there does have to be excess generating capacity at times to meet those needs.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: Yes.

HUGHES: And unfortunately, this event showed us that we don't have the capacity that we need.

TOM KENT: Well, this-- this event showed us that in this extreme cold weather event-- and my opinion only, more to learn, right? But in this extreme cold weather event, there is a combination of factors, both in increasing customer load, in the lack of natural gas because of, maybe, multiple issues that need to be figured out, and impacts on-- on resources to operate, to be able to operate because of the cold weather. The combination of those things contributed to this event. Whether that results in a determination that we need to increase our-- our reserve margin, increase that planning reserve margin, that's one of the questions we need to ask and answer as we go through the learning process.

HUGHES: So did the fact that renewable energy was basically nonfunctioning during this time period?

TOM KENT: It would have certainly helped had more wind been blowing. But as you've heard-- as you've heard before, and you'll hear again, the-- the wind was expected to be low during this time frame.

HUGHES: Yeah, my last-- last question. So there was a-- Senator Wayne asked a question about not complying with a directive from SPP to shed load. Is there any kind of a federal fine or anything that would-- would come into play if you chose not to follow that directive?

TOM KENT: Potentially a million dollars a day per event.

HUGHES: OK, very good. Thank you,

BOSTELMAN: Senator Gragert.

GRAGERT: Thank you. A couple of quick ones, and I mean, just a couple, so--

TOM KENT: OK.

GRAGERT: Is NPPD the only public entity in SPP?

TOM KENT: No.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GRAGERT: No? We were talking-- thank you-- we were talking a little bit and inquired a little bit to Mr. Wailes-- I believe it was-- on natural gas. You know, in 2000-- or February 13 and 15, were you-- were you auth-- or authorized to purchase?

TOM KENT: Yes, additional natural gas, yes.

GRAGERT: Yeah, at $22.6 million the first time and $80-- what, $81.6?

TOM KENT: $80-- $81-$82 million, yeah.

GRAGERT: Is that paid back? Is that going to be paid back through the electricity sales or to the customers?

TOM KENT: Yes, I believe-- I believe it will, and the way-- the way the process is supposed to work. And, you know, we're still working through the details with the Southwest Power Pool on settling, but there's a mechanism in the market to ensure that, in these events, the generators are-- are kept whole.

GRAGERT: Thank you.

TOM KENT: Still have to work through the details.

GRAGERT: Thanks.

TOM KENT: Yes.

BOSTELMAN: Were there any limitations in transmitting power to or receiving power from the SPP?

TOM KENT: Well, I believe there were limitations in transmitting power from the northern states to the southern states, at least during part of this. And I can't remember which tab it is, but they're-- one of the tab talks-- tabs talks about the constraints that were activated or breached across the SPP footprint. I think it's Tab-- I can find it.

BOSTELMAN: So I believe maybe last year North Dakota had blackouts. Are they part of the SPP?

TOM KENT: Parts of North Dakota are part of SPP, and I don't recall the blackouts. I'm sorry.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

BOSTELMAN: Yeah, they-- Minnesota had them in the winter time. North Dakota had in the wintertime-- similar situation that we're seeing here now. It was very cold, you know, what happened and-- and at night, no wind type of thing. So--

TOM KENT: Again, Mr. Nickell might have more information on that.

BOSTELMAN: Sure.

TOM KENT: Parts of North Dakota are part of MISO as well, so--

BOSTELMAN: Sure. In your opinion, what can be done by SPP and member utilities to ensure this electricity shortage is not repeated? Talking about generation? Are we talking about the increased supply capacity, the ability to selectively shed load, turning off things?

TOM KENT: I think it's a-- it's a number of factors and a lot that we're probably going to have to-- have to learn yet, and that we will learn over the next few months. The-- the whole issue of generation availability and the cold weather and what that was caused by-- was it due to fuel supply issues? That-- they'll-- getting to those details will help us understand the tools that maybe we need to use better or differently in terms of how we look at generation in the winter months versus the summer months. Figuring out what that right accredited capacity is and-- and what impacts fuel has on that, I think, is an important issue. Certainly better tools, as I mentioned in my comments, that we need to look at again, we will have to learn more. But are there tools that would allow us to differentiate how the loads get reduced in these extreme events differently, that would provide a more fine knife, so to speak, for the operators so that we don't get in a situation where maybe we're having a counterproductive outcome because we've got two similar things going on at the same time?

BOSTELMAN: And I think that's kind of-- goes along with my next question. In NPPD's 2018 Integrated Resource Plan on page 14, it states in there an additional 31,000 megawatts of wind and 3-- 3,100 hundred megawatts of solar in the SPP Generation Interconnection Queue as of May, 2017. So with this renewable power in the SPP Queue, how is this going to impact NPPD's reliability at the next event? And could we potentially have twice as much renewables as the SPP footprint for the next event?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: So there's certainly-- and again, it's probably better answered, the exact numbers, from Mr. Nickell-- but there's certainly a lot of new generation that's in their-- what we call their planning queue or their list. Not all of that will be interconnected, but you have to go through a process to-- if you want to add generation to make sure it can be done reliably. Most of that happens to be renewables. Again, a lot of that won't necessarily come, but I would expect that the likelihood of renewables in the footprint will continue to grow. As I mentioned at the beginning, what the operators do in the balancing area and in transmission systems is a balanced generation and load. And historically, you've been moving generation to follow load well over the last several years, as we have these intermittent resources becoming a larger and larger part of the resource mix. You also have to be able to move other generation to follow not only load, but changes in what the output is of those resources. So it's a more complicated problem for the operators. There's been a lot of discussions and a lot of new tools developed to help the operators manage that. But that-- that volatility that comes with that changing resource mix, which is happening around us, is something that we have to be able to deal with, as an industry, to ensure reliability.

BOSTELMAN: Yeah, but-- but to that point, I think according to SPP and I want to quote: Maintaining reliability with this large amount of wind is extraordinary, unquote, said Barbara Sugg, president and chief executive officer. And, quote: To manage this high volume of variable energy, we rely on accurate forecasting, a robust transmission system, a diverse generation mix, and our equitable and efficient wholesale energy market, unquote. So for NPPD's perspective, why was or is there no emergency planning in place for instances when SPP calls for rolling blackouts, especially in light of the previous statement made by the chief president, Chief Executive Officer Sugg? Or if there is an NPPD emergency plan in place, describe it and what improvements should be made.

TOM KENT: So there is an emergency plan in place, and we saw that plan being executed in these rolling blackouts that happened on the 15th and 16th. And again, it's-- it's a plan that has the opportunity to do these controlled manual outages to try and maintain the balance, again at the direction of the reliability coordinator and the balancing authority. And then there is a phase where, when the system degrades to a certain point from a frequency standpoint, automatic load

protection-- automatic protection comes in to shed load automatically. We try and avoid that. All of these systems are set up to avoid that black start event that we talked about to avoid that large cascading outage. So that plan, opportunities to make it better, we don't have, at NPPD, accurate information-- up-to-date information on what all loads are connected on those breakers on our customer systems. So we have to improve that process with our customers to ensure that we maintain that current over time. We also, as-- as mentioned by Mr. Kirby, we-- we need to look at how we can improve the communications that we do with our customers and give them as much notice in these events. And we will be doing a joint review team with our customers to address both of those issues. We probably-- well, not probably-- we will be working through our operations team and the operations groups at the Southwest Power Pool, the teams that provide feedback and oversight from a-- from a-- from a member participation standpoint in the area of operations, evaluating the tools that were used and how maybe they can be used better and different, how we can improve communications that are coming from their operators to our operators and back and forth. So that's where a lot, from our perspective, a lot of the improvements I see direct need and oversight for, from an NPPD standpoint, to deal with for our customers is really around communications and how we execute those plans and making sure they know that and maintain current overtime because they're rarely used, as we pointed out. From providing oversight and input to SPP, these questions that I talked about in terms of fuel security and better tools and those kinds of things, there's a lot to learn yet. But those are the questions that I'm interested in. And I-- and I believe the other NPPD-- or the other Nebraska utilities are interested in participating and-- and providing our input. So their processes become better as well.

BOSTELMAN: You know, I have a couple more questions. I've got-- I have one comment. This committee had the opportunity to have a meeting with NPPA, our oil and gas producers in southwest Nebraska, and southeast Nebraska. And I will-- they did say that NPPD did communicate with them very well, letting them know ahead of time on their outage that they had. Their challenge was, obviously at the time they were out of power, to keep their lines from freezing for that time. What was interesting in that was one of the providers was from Texas-Oklahoma area. And what happened down there was-- was they were just shut off. No, they shut the power off completely. So when we say there is a

shortage of natural gas, I kind of question how that happened because of some of our-- not that you-- not that you did anything in the sense, but in those-- those portions in those states, it's interesting that their report there was, we had no warning. They just shut us off so we couldn't produce. So that's more of a comment than a question for you. I just want to say I heard good things about NPPD, with working with them. So I appreciate that. My question is, is now the time to revisit our commitment to supply renewable energy to Monolith? Should NPPD just commit to a firm zero-carbon generation source instead, say, modular nuclear [INAUDIBLE]? My understanding is NPPD is requiring an estimated $200 million to retrofit-- to retrofit for the Sheldon facility to convert it from coal-fired power, a boiler to a hydrogen-fired boiler. And that is-- that cost would be burdened of Monolith, who originally was going to pay for that retrofit.

TOM KENT: So had the retrofit continued-- and we didn't have the final cost estimates yet-- but had that continued, that would have been paid for by Monolith.

BOSTELMAN: That was from day one?

TOM KENT: Um-hum.

BOSTELMAN: That was from the original one? We did groundbreaking--

TOM KENT: Yes.

BOSTELMAN: --a couple years ago,--

TOM KENT: Yes.

BOSTELMAN: --that was always understood by them?

TOM KENT: Yes.

BOSTELMAN: OK, so NP-- next question is, NPPD has-- have you considered doing an extended power uprate to Cooper Nuclear Station in light of the recent events, for instance, increasing power output an additional 10-20 percent from 80 to 160 megawatt output? It is understood that this is-- this was seriously considered as an option, but postponed indefinitely. Should NPPD reconsider this in light of the events that occurred in the relationship to achieving zero-carbon emission-- emission reductions and providing a reliable energy source?

This was also discussed in 2018 Integrated Resource Plan. You know, almost every boiling water reactor in the U.S. has conducted an extended power rate-- uprate except for Cooper.

TOM KENT: Yes, and that-- that's correct. And we made the decision in that time frame to not pursue a power uprate. There was significant risks, as we reviewed with others, other utilities that had done the power uprate, from a cost and schedule standpoint. From a resource mix standpoint, we didn't need the extra generation at that time. Cooper is a wonderful resource. I started my career at Cooper Nuclear Station. I served in the Nuclear Navy, so I'm a big proponent of nuclear. What we need to look at next, in our next IRP, is whether it makes sense to pursue an additional license renewal. The current license expires in 2034. And so that's something that's on the plate that we'll be talking about. We're certainly very interested in other nuclear topics, small modular nuclear, for example, following that very closely. If that takes off, as we see some of the early adopters build those units and we see some reliability and predictability in cost and operation, that's certainly, in my opinion, an opportunity for a-- a future resource for us as we look at adding resources. But not only does it need to be-- has-- it has the benefit-- doesn't need to be-- but has the benefit of being carbon-free, has the great benefit of being reliable, it has to be cost-effective for our customers. And-- and that's what we're-- we're watching and monitoring and certainly hope that we can see that happen with small modular nuclear reactors. So--

BOSTELMAN: Senator Moser.

MOSER: Senator Wayne's gone. But as a follow up to his question about why your generators, different generation sites were not operating at higher percentages of capacity, do you need to have a balance in case one of those goes down so you can cover yourself?

TOM KENT: Well, there's a couple of things that impact capacity factor, certainly maintenance outages when we take the unit out of service for maintenance, and I'll use the Gerald Gentleman Station, Unit 2, in 2020. That number was quite a bit less than some of the previous years, and we had an extra long outage because of an emergent issue. The rest of it's driven by the market and market conditions. And we certainly operate those units during high-load seasons, during

good market prices. But the market will impact how those units operate on a day-to-day basis.

MOSER: You need to be able to handle your maximum load.

TOM KENT: Yes.

MOSER: And so sometimes that's 30, 40 percent more than the average.

TOM KENT: Yes. So our resources are there and we're built-- you know, 40 years ago-- to serve our peak loads. And so when our loads aren't at peak levels, they're available to run in the market, and the market helps provide those signals.

MOSER: Are the two different sites of coal generators comparable or is one more efficient to run than the other? Is that a reason why one is run more than the other?

TOM KENT: The age and the technology is significantly different. So that impacts the efficiency and costs to run somewhat. I mean, the Sheldon units--

MOSER: So you're-- you're being smart by running one-- more--

TOM KENT: Yes.

MOSER: --on one than the other.

TOM KENT: Yeah. And yes, we're listening--

MOSER: You're achieving some of your carbon goals. So it's not ineptitude or, you know, something that we would-- would assume by looking at those different percentages. You're accomplishing a goal.

TOM KENT: We're-- we're making decisions to operate those units in a fashion that ensures reliability and provides the best economic outcomes for our customers. That's really what impacts some of those decisions.

MOSER: Thank you.

TOM KENT: Thank you.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

BOSTELMAN: What part-- what part of that percentage we're seeing would be based more upon what fuel availability is on online and whether it's available-- in other words, if wind was-- or solar or another generation was cheaper on the grid, so you're not going to power that up? So that's not going to run as much as what we're buying. You're not going to generate as much because you have another source of energy.

TOM KENT: Yes.

BOSTELMAN: Is that-- is that correct? I mean, that would be a factor with that?

TOM KENT: Certainly the-- the lower cost wind and solar, since the fuel's free, are going to get dispatched or be asked to run first and then the costs stack up from that. So the next lowest cost might be nuclear or the next lowest cost might be some of our coal units and so on. And then that's how they get dispatched by the market.

BOSTELMAN: Right. And that could-- potentially, that could be why that percentage fluctuates like that.

TOM KENT: That certainly impacts some of the capacity factor numbers.

BOSTELMAN: Sure. OK, thank you. Senator Gragert.

GRAGERT: I just want to take the opportunity to talk a little bit about nuclear. The nuclear waste that is stored at Fort Calhoun and Cooper,--

TOM KENT: Yes.

GRAGERT: --was that originally supposed to be temporary, and is it still temporary? Or have we went-- have we went to permanent?

TOM KENT: Well, that's an interesting question. I believe it's-- it is still considered temporary by the NRC and the regulators and the DOE. But it's going to be there a long time, likely until there's a better national solution.

GRAGERT: So you know, with the flooding that's been going on, there's no compromise of those-- of that storage facilities?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: No. Those-- those particular facilities are out of the floodplain and very robust facilities that are meant to operate safely for hundreds of years.

GRAGERT: OK, thank you.

TOM KENT: Yeah.

BOSTELMAN: Senator Groene.

GROENE: Quick clar-- clarification. You-- Senator Hughes asked you about the Power Review Board? I served here when we took away the power from the Power Reserve [SIC] Board on wind farms. They don't get to say nay or yea to a wind project anymore.

TOM KENT: That's-- for privately developed wind resources, that's correct.

GROENE: All right.

TOM KENT: I was-- I was responding specifically to NPPD's interactions.

GROENE: [INAUDIBLE] interactions.

TOM KENT: Yes.

GROENE: So they can say yea or nay, but not to a private one. All right. And also Lexington-- did you need to turn-- power that up or did SPP tell you to power it up with expensive natural gas?

TOM KENT: So SPP has a process where they identify units that they want to be available to run, from a reliability standpoint, and they identified the candidate unit as a unit that they wanted to be available to run. So--

GROENE: They made that decision for you.

TOM KENT: Yeah, it goes-- it goes through their market process where they not only look at the daily price, but they look at units that might be needed for reliability.

GROENE: More clarity to what Senator Hughes asked you. First you-- we've been told that SPPPD [SIC] asked us to shed, and then you

replied to him, there's this guy behind a curtain somewhere that said, you will shed.

TOM KENT: It's--

GROENE: Who is that guy?.

TOM KENT: It's-- it's a directive--

GROENE: All right.

TOM KENT: --that's provided under the-- this is all within the federal regulatory framework for reliability regulations, OK? So the SPP's role is the balancing authority and the reliability coordinator. They direct the membership in this situation to shed a certain percentage of their load.

GROENE: If you said no,--

TOM KENT: We couldn't have said no.

GROENE: You just-- you said you could-- you could disobey the board and say no because of somebody reliable. Who is that?

TOM KENT: Ask the question again. I'm confused.

GROENE: Senator Hughes asked you if the board asked you-- but was it Senator Wayne? Maybe it was--

TOM KENT: Senator Wayne.

GROENE: Senator Wayne asked you. He says the board-- elected board of-- Nebraska elected board told you to not obey the shed order, could we have production? You said you would decline--

TOM KENT: That's right.

GROENE: --because of-- not SPPD, some other entity.

TOM KENT: That-- that's the NERC reliability requirements, the North American Electric Reliability Corporation, who gets their authority through the Federal Energy Regulatory Commission to regulate the bulk electric system, the bulk power system, which is the generators and transmission people that's derived from the Energy Policy Act of 2005.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: So they tell SPPD to shed.

TOM KENT: They set the rules. Then SPP and NPPD and all the other regulated entities follow the rules.

GROENE: The rules said you've got to have reliability, so you-- shedding is part of that.

TOM KENT: Yeah, in the case of the instance that came up this week, in order to ensure reliability, we, to-- to regain that balance and ensure reliability, we had to do the load shed actions, yes.

GROENE: Thank you.

BOSTELMAN: Senator Cavanaugh.

J. CAVANAUGH: Thank you for being here. I don't think I've asked you a question yet, but there have been a lot of great questions, and I appreciate your testimony. I'm just looking at this, particularly the percentage of production from February 7th through the 21st. There's a note: At times, NPPD resources were at lower levels to provide SPP operating reserves and manage transmission flows. And I look at 2-16, and I see that the Sheldon coal went down from-- on the 15th there was at 97 percent down to 70 percent, and the Beatrice gas went from 62 to 39. So I guess all the stuff I'm hearing is that we were producing as much as we could and we still had to shed and we were selling power, right?

TOM KENT: Yes. In order to maintain the balance in the grid, we had to take the actions, yes.

J. CAVANAUGH: And there's some structural problem that meant that we actually had to shed load and production at the same time.

TOM KENT: I don't know that it's a structural problem. I think it's something that needs to be investigated to see if there's better tools that can be developed to manage it, because it's-- it's counterproductive to be on the side of the congestion that we were on to both be reducing load and reducing generation.

J. CAVANAUGH: It's counterproductive.

TOM KENT: Yes, it doesn't accomplish the goal as effectively as it could.

J. CAVANAUGH: Right. But just looking at the numbers here and the timeline, that's what it looks like happened, right?

TOM KENT: That would--

J. CAVANAUGH: Am I wrong that--

TOM KENT: Which-- which chart are you looking at, so I'm looking at the same information?

J. CAVANAUGH: It's the last page of Section 8. On 2-16, that's the day at least that I'm pretty sure was Monday. Is that right? On the right-- on the right there. Tuesday. I'm sorry, the day--

TOM KENT: Tuesday the 16th.

J. CAVANAUGH: --where people-- where we were shedding load. And it looks like we were curtailing production, at least a couple of these baseload production facilities.

TOM KENT: So it's possible. And again, this is the stuff that we have to go through the details to understand. It's also possible that our units were at a lower level in order to provide that operating reserve margin to be able to respond quickly to increases in customer load. So it's-- it's likely a combination of things. That's why I'm-- I'm hesitant to say it's a structural problem. I think we really need to understand all the different factors that were-- that were happening at that time to-- to get a feel for, all right, do we need better tools? Because it's possible-- it's-- it's possible that it was a counterproductive mood-- move. It's also possible that part of the reason they were lower was in order to provide those reserves to respond to increasing load.

J. CAVANAUGH: When might we have those answers?

TOM KENT: The study work that SPP just kicked off this week, they plan to have the results of that work done in July for their board.

J. CAVANAUGH: So we should come back as well.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TOM KENT: Well, we can certainly share the results with you-- definitely.

J. CAVANAUGH: Thank you.

BOSTELMAN: Senator Groene.

GROENE: Am I wasting my time here? Does this body, the legislative body, have the ability, sovereignty over our power-- our public power to tell you, with the statutes, that we want a baseload of-- of coal, nuclear, reliable energy of no less than 60 percent or something? Do we have that power to tell our public power that that's what we want, and we do not want to overrely on unreliable sources of energy?

TOM KENT: So we're-- the whole public power industry is creatures of the Legislature. We were established by the Legislature, and the Legislature can change how we operate.

GROENE: The bylaws of SPPD, do you follow-- do they follow the statutes of the member states?

TOM KENT: So in the case of us, us being NPPD, all right, it's clear in our membership agreement that our board retains their authority as established by the statutes of Nebraska.

GROENE: So we could do that. We--

TOM KENT: Well, the Legislature, I think you can do whatever you want. I mean, you have to go through the process to determine whether that's right or not. But I'm-- you know, I'm not--

GROENE: Has any--

TOM KENT: --going to-- I'm not going to speak for what the 49 states--

GROENE: Has any states done that?

TOM KENT: Hmm?

GROENE: Has any states came up with baseloads? I know Germany and Europe has learned their lesson--

TOM KENT: Yeah.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: --that they need to.

TOM KENT: Not that I'm aware of, but-- but I don't know.

GROENE: All right. Thank you, sir. You've been very cooperative, and I appreciate that--

TOM KENT: Thank you.

GROENE: --you answered the questions straight as far as I'm concerned.

TOM KENT: Thank you.

BOSTELMAN: Thank you, Mr. Kent. We appreciate you coming to testify today. That'll be all for now.

TOM KENT: Thank you.

BOSTELMAN: Thank you. Next we'll have Mr. Burke from OPPD.

WAYNE: All right.

TIM BURKE: Good afternoon, Senator Bostelman. Members of the Natural Resource Committee, my name is Tim Burke and that's T-i-m B-u-r-k-e, and I'm the president and CEO of Omaha Public Power District. And I apologize for being here in a somewhat casual attire, but I couldn't get a shirt over this or a coat. I look forward to our conversation today. And I think, up-- up to this point, it's been-- it's been really important for this body to hear some of the factual data. And I'm sure you're going to also hear that from SPP after me, really around what we consider this a really unprecedented polar vortex event. And so we're really looking forward to the lessons learned, not only internally from an OPPD perspective and from a public power perspective, but also from an SPP perspective. You know, we've talked a little bit about public power, you know, just a little bit, and it is unique and different. And I used to be, on the investor-- on the utility side where I served and operated places where I didn't live necessarily. And so public power is different where our customers are our neighbors and we go to church with them. We go to school with them-- where, you know, we just do a number of things in the community and what we do. And so we take this job that we do incredibly seriously about providing reliable power to all of our customer owners and the men and women, certainly at OPPD-- and I think I can speak for

the public power entities in this room and across the state. You know, we make energy, we generate energy, we distribute and transmit energy, we restore power. And we don't like to disconnect it. That is not intuitive of what we do and why we do it. Now, the events on February 15 and 16 is something that-- I think you've heard before-- we-- we never want to happen again in this region or, for that matter, even in this industry. And so as I've said in several of the other media opportunities that I've had over the last couple of weeks, you know, we're very apologetic. This is not how this system is really intended to operate. But I will tell you at the same time, because of the quick and the thoughtful action, we really prevented a much larger incident. And you've heard it mentioned a couple of times, whether it's southern Texas, whether it's the blackouts in 2003 on the-- in the Northeast, whether it's Southern California blackouts for multiple days, we were able to prevent that in this very unusual and unique event. So we are committed to learn and improve from our after-action review on behalf of our customer owners. And we'll-- we'll continue to do that. I want to talk a little bit about what led up or what was leading up to the February 15 and 16, from an OPPD perspective. You know, we had a planned outage in our North Omaha coal plant Number 4. It was in the process of going through a routine maintenance. And typically in this industry, we really look at spring, winter, and fall or fall, winter, and spring as the times where we prepare those units for our peak load, which would be in the summer, traditionally. We did have a-- a Number 5. One of our-- one of our units-- excuse me, Number 5 was on our planned maintenance. Number 4 went off on a tube leak. We had Number-- Nebraska City Number 1, had a loss of vacuum pressure that went offline, leading up to that week of the 15th and 16th. And Nebraska City 2 had a boiler tube leak. So we repaired and we restarted Nebraska City 1 and Nebraska City 2 before February 15 and 16. We accelerated the planned outages and restored power to Number 4, which had a tube leak. And the men and women at OPPD did some amazing things. And we had enough generation availability to meet the loads on February 15 and 16. Now, in many of the peakers, we also had dual fuel, and you've heard that before, where we use both natural gas and fuel oil. And so beginning on February 5th, we began to acquire supplies for fuel oil across our peaking facilities, as well. And that secondary fuel source really increases our resiliency and a variety of other options. You heard Kevin Wailes speak to that. You heard Tom Kent speak to that, as-- as well, specifically when natural gas supplies are short or constrained; and that's exactly what happened in

this event. Now, our system operators, you know, we plan and we exercise these kinds of events all the time. And you've heard about a black star drill. You've heard a variety of different things. But we practice and drill on storms and tornado events, pandemic events, GridEx cybersecurity events. This is what we do in our system operations-related work. And specifically regarding the events on February 15 and 16, you know, we are required to have these load-shedding plans in place. So we have a plan. It's called the OPPD Load Shed Plan, and we exercised that plan as it was intended, and we did it flawlessly. It was the first time in OPPD's history that we had to execute that-- that plan, and that was over 75 years. So it was a pretty significant event for us, even though we've done tabletop drills. And I think you heard Kevin Wailes speak to this. You know, we've done pandemic drills before, but until you get in the face of the battle, you know, the plan can change and needs to change; and we did that. And we did that with this plan specifically. Our plan spoke to-- and we typically would plan something like this during a peak time, typically would be the summer. And what we did was actually reduce our load-shed time from two hours, which was in the plan, to one hour because of the extreme weather circumstances that we were seeing in the Midwest. And what we identified is that we would actually see probably-- or customers would see about a two-to-three degree temperature difference. And since my house was one of those that was in the planned outage on Tuesday, we did, we saw about a two degree temperature difference in our house. So now, can we improve on those events? We definitely can and we definitely will. And we've learned quite a bit by really trying to live out this plan in real time, certainly over the-- the days of February 15 and 16. So it is important, I believe, to remember that when SPP issues a directive-- and I think I'm using the same words that-- that Tom Kent used-- the directive to shed load-- we must do so immediately without intentional delay. And I think that is written in the regulations and other areas of the country that have been fined when they didn't do that, to the fines that Mr. Kent and others have talked about. So we must do so immediately and without intentional delay, because these are seconds and-- and minutes that we have to react in order to maintain the stability of the system. You know, our plan is focused on load only at this time. Now we do some of the same emergency preparedness work that others have done, where we try to eliminate hospitals and-- and emergency systems across our service territory in the best manner that we can. But I will tell you that, as we've lived out and exercised

this load-shedding plan, we have some work to do. And we have teams that have been working this week to make sure that we update those circuits, those areas, those critical loads in our service territory, and-- and we'll make sure that we make those changes. So our plan is focused on load, and, in our service territory, it's really divided into geographical areas across-- starting from the southeast side of our metropolitan area that could include into-- into Cass County all the way through the west, which include Saunders County, across the metropolitan area, which include Dodge County and Washington County to the north, and all the way over to the north part of our service territory in-- in the north part of Omaha. And we shed based on load needs. Now, you've heard this mentioned a couple of times. You know, SPP really identifies how much load we need to shed, and they do that by utility. And we know that at the time they give us the directive. But we have in our geographical blocks, so to speak, specific circuits and a grouping of circuits that gives us X amount of megawatts. And so when we get the directive on the megawatts and the requirement of the time, we begin to execute that operational planned outage across our service territory. And we do it in the metropolitan area, and also including some of our rural areas, in a very contiguous fashion, right? So they're contiguous to each other as we move around the metropolitan area. And so the example that I would use is that on February 15, on Monday, we executed our first block, which is in primarily south Sarpy County and all the way up to about L Street over at about 42nd Street, if you're familiar with those streets. Certainly the folks from Omaha are familiar with that, as well. And that was our first block. On February 16, we started on the second block. And so we did not execute the outage on the first block again. So we started on the second block and began to work our way around. The first day, we had about 11,000 customers that were involved in the unplanned outage. Over the course of the second day, February 16, we had about 70,000 customers where we had multiple events. And very similar to-- to what Kevin Wailes and Tom Kent talked about, on the first day we were required to curtail about 28 megawatts. On Tuesday the 16th, we had a request to curtail 63 megawatts, and then another 63 megawatts on top of that, and that's why we began to kind of accelerate the-- the blocks in the geographical areas where we had those planned outages. Now we do that in the contiguous area across our service territory, because on that first day when we essentially had planned outages, we did have customers on circuits where we tried to re-energize those that we had either breaker- or similar closer-related issues. And

those outages, those planned outages were typically in that one-hour period of time. From the original plan of two hours, we shrunk them to one hour. And-- and we did have some customers that might have been out a little longer than that. But that was because of other mechanical or other equipment-related issues. And we maintained that hour-related planned outage across our service territory over that February 15 and 16 timeframe. And we do that in that contiguous area because we want to make sure, as we energize all circuits, we have kind of our first responders either on the substation, our line technicians, able to move as those outages move throughout the metropolitan area so that when we have those issues, rather than having them scattered throughout our service territory, where now we're trying to run to, you know, the hot spot or who may be out, we're able to kind of move through that energized area across our service territory in a much more efficient manner. And we saw that to become effective on Monday, the 15th, when-- when a circuit or two did not reenergize right away. From our customer communication perspective, this is an area where I think you're going to see our after-action review kind of increase, kind of, our intensity around what we need to be doing differently. But, you know, we went out early, as you heard before, from-- from Kevin and Tom, where we began to communicate. Tom and Kevin and I were communicating earlier that weekend and our teams were getting together to make sure our messages, you know, were consistent across our service territories. And-- and I think what-- what I perceived completely different than maybe others that I've seen and other footprints, is that the workability across public power was incredibly collaborative. And I think that's in the best interest of our customer owners here in Nebraska. You know, we-- we did a couple of things, and I know the SPP folks will be behind me. But, you know, I had a conversation with Barbara Sugg, who's here today, who's the president, CEO of SPP, and she got with Lanny Nickells to address some issues that we were seeing across our operation group very quickly. And so that communication and that response, from my perspective, was incredibly valuable, incredibly timely. Now, as we got our first order on the 15th to actually start our planned outages, we-- we were struggling, trying to communicate in advance of that planned outage, because we didn't know exactly what the megawatt hours would be, but we knew we were going to start in this first block across our geographical area. We got a little better as we went through Monday. And Tuesday, we were actually beginning to call and-- and provide text and messages to customers, letting them

know that this would be part of our planned outage process due to the polar vortex, severe weather. And we provided them notice. We provided them safety tips and a-- and a variety of preparatory-- or preparation tips that they could use as we began to accelerate these planned outages across our service territory. You know, we reached out to commercial industrial customers. You heard Kevin talk a little bit about that. We have some industrial customers that have curtailable rates, where we can call on them to curtail. Now typically we've only done that during the summertime, where we've asked them to curtail and they've been able to do that. So this is the first time that we've had to do something like this in the wintertime. So we reached out to those curtailable customers, and they-- they did some amazing kind of activity to support us. We actually went to customers that had backup generation, and those customers also engaged in supporting us. And on Tuesday, during kind of the biggest peak of those planned outages, we had about 126 megawatts of load that was reduced by our commercial and industrial customers that really saved, potentially, rolling planned outages to over 40,000 people, potentially. That was pretty significant. And we really want to thank our customers. I think what we have seen, whether it's during the peak part of the summer when we ask customers to-- to think about conservation and during the summer to raise your temperatures up and we saw it, same where you raised your temperatures down, we saw customers respond to that very clearly. I'm not sure we can empirically identify it in our load charts, but I think SPP, based on their board meeting conversation yesterday, certainly saw that across the footprint when the utilities got together and began to communicate around those-- around those areas. We did a significant amount of media outreach because this is a very interesting and technical and somewhat difficult topic to talk about, SPP and the activities that we've been talking about here today. But I think our media did a nice job as we kind of moved through the days to really provide nice messaging around this unprecedented event. Now, moving forward, you know, I think you've heard from every of the major utilities. We're going to be doing our after-action review. We committed that to our board last week. We're putting together our scoping document and what that will look like. Our teams are already beginning to meet and understand some of the communication and the customer-specific requirements that we need to pay attention to. You have heard that Department of Energy, Federal Energy Regulatory Commission, that is not only on the electric side but also has jurisdiction on the gas side, will play an important role on this

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

because, as you have heard, the natural gas constraints, whether it's supply or system or infrastructure, were pretty critical in what was occurring throughout SPP, and then the North American Electric Reliability Corporation, as well. I had the opportunity to sit on a virtual board meeting with SPP yesterday. We have a member-- member of OPPD that is on that board, and they are-- have committed to an NPA member representative to sit on their review committee, one of two members that will be on the review committee as they begin to step through their review process. And I'm sure Mr. Nickells, with SPP, will speak a little more detailed about that. Our after-action review plan will be shared with our board. It'll be done in a public setting and it'll be done for transparency, openness-- be open to the public. We'll post it on our oppdcommunityconnect.com on what that will look like going forward. You know, this event, in my opinion, will have a national impact on this industry and not just-- not just regionally, not just locally. But it will-- it will impact this industry and it will probably impact multiple industries. I think it will impact the natural gas industry. I think it's going to impact the electric industry, as well. I think it's going to impact the way we think about dual-fuel capabilities and resiliency across our service territory. OPPD, the majority of our gas units have fuel oil capability. Our peaker units have fuel oil. There's only two down in Cass County that abut two major pipelines that we do not have fuel oil at those, but we were able to-- to obtain natural gas supplies through the course of the significant event that we saw on February 15 and 16. So I understand people will be critical, but I will tell you that inside our organization, we-- we will be the most critical of what we do and how we do it and how we engage with SPP and the other utilities around this issue. And the one thing I would just say, you know-- and I understand people will be critical-- but-- but I will tell you, there was some pretty significant work done to prevent a significant event occurring throughout this 14- and probably multiple-state region. Because it-- because of the interconnection, it just potentially wouldn't have stopped at SPP. And-- and so the folks here in Nebraska and the folks that supported us through SPP, I think did some pretty significant work. And so with that, I'll move right to any questions or comments that you have for me.

BOSTELMAN: OK, thank you, Mr. Burke. Senator Hughes.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

HUGHES: Thank you, Mr. Burke, for coming today. I want to get just a little farther into the weeds on how you determine blackouts. So you said you-- you have blocks.

TIM BURKE: Sure.

HUGHES: And when they asked you that you-- the first time the SPP asked you to shed, it was 28 megawatts. So are all blocks roughly the same size when it comes to megawatts?

TIM BURKE: It'll-- it'll be relatively close but, you know, I would say a circuit in our service territory may be 1,500 customers. So we may take out 10 circuits in that block to support 28 megawatts of load.

HUGHES: So you don't have the ability to say, well, we're going to take 5 here and 10 here and 12 here to make up 28.

TIM BURKE: We do. We do, but for the reasons why we want them contiguous across our service territory, because when we re-energize them back in, we want to make sure we have operational people. I don't want to have somebody in northeast Nebraska have a-- have power outage because a breaker fails or a recloser fails or someone in northwest. But if I can move them across our service territory in that manner, it's really more effective for us to be able to get to that restoration quicker and faster.

HUGHES: OK, so you have a pretty good idea of what the usage in that block will be--

TIM BURKE: Correct.

HUGHES: --to-- in order to match your 28 or 63?

TIM BURKE: That's correct. We do.

HUGHES: OK, very good. Then my-- my last question. OPPD has had pretty significant growth because you've been able to meet the requirements from some pretty national companies wanting green energy, so Google, Facebook. I think they came to Omaha because OPPD could guarantee them green energy. So how do you guarantee them green energy after dark and this, you know, the wind's not blowing?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TIM BURKE: Sure. Well, one is-- in-- in each of these examples of these companies that have come, we are not essentially acquiring green energy on their behalf. We're allowing them access to the market. And there's a-- there's a risk to that and there's a benefit to that. And they get that opportunity. Because of their significant loads and voltage capability, they get to play in that market. They get the opportunity to go into the market and build their own wind or develop their own wind or buy their own wind, however they want to do that. And they get that market capability to be able to do that. And so the rate that we developed-- it's called Rate 261M. It's a market kind of adjusted rate, which allows them the capability to be able to do that at relatively significant loads that are tied into our 345-161 transmission infrastructure, which is really where it fits into the energy market piece under SPP.

HUGHES: That's-- that's way farther into the weeds than I wanted to get. I guess my-- my question was that when people market themselves as being 100 percent green energy, they're being disingenuous because, if the wind's not blowing after dark, they can't have energy.

TIM BURKE: Yeah, no, I appreciate that. I think these-- these companies really have a broader vision going forward, a long-term vision on how they want to look at that. I think-- I think you will see that. I think the comment was on battery storage or somebody talked about battery storage. I think-- I think you're going to see that, as that technology develops, they're-- they're-- they will have that conversation and think about how that incorporates into their overall zero emission kind of commitment.

HUGHES: So the short-term answer is, as a matter of an accounting, how they can promote themselves as [INAUDIBLE].

TIM BURKE: I'm going to let them worry about what that looks like.

HUGHES: OK.

TIM BURKE: My-- my job was to allow the access and the capability for them to locate in Nebraska, provide those jobs, provide those capital investments, and allow them to take-- take and engage in the market.

HUGHES: Thank you.

TIM BURKE: You bet.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

BOSTELMAN: Senator Groene.

GROENE: Thank you, Chairman. Thank you, sir, for coming in.

TIM BURKE: You bet.

GROENE: So pick up where Senator Hughes said. First, what's the goal? I heard a-- Lincoln public-- LES, that says they're going to go zero-carbon. What's-- what's the PR Board's goal?

TIM BURKE: So our board has 15 strategic directives. And one of our strategic directives, Strategic Directive Number 7, is our environmental stewardship commitment. And that objective would be, we would be net zero carbon by 2050.

GROENE: 2050, all right.

TIM BURKE: 2050.

GROENE: So now you shut down Fort Calhoun.

TIM BURKE: We did, um-hum.

GROENE: Who's paying for that? As-- I heard cost share. Is the SPP, the members helping to share that cost to shut down?

TIM BURKE: No, no. The cost-share component is really around-- I believe that the conversation that Mr. Kent was talking about was around transmission cost sharing. So as we build transmission in the SPP footprint, we don't have to pay 100 percent of that if others in the SPP footprint benefit from that transmission.

GROENE: So now coal-- nuclear is less right now, would have been a lot less in this situation than natural gas, which was six-- seven-- six-- reached $600 or $3,000 a mega-kilowatt. Is that correct, the price of it on the market?

TIM BURKE: Well, I think you would see, typically, natural gas is in that $5 a million BTU. I'll-- I'll let you figure out the increments of that. But, you know, typically it's in that kind of a range. Sometimes it's lower than that during the summer. But we did see spiking that occurred.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: So you had to do more natural gas.

TIM BURKE: We did do some natural gas primarily at our Cass County facility--

GROENE: So [INAUDIBLE].

TIM BURKE: --and then fuel oil at our other peaking facilities.

GROENE: Facebook's decision and other companies saying they want you to go green and you shut down Fort Calhoun. Who-- what are they paying for their energy then? Did they have to pay that cost of that high natural gas? Or did they still get the benefit of a blended price on-- on that blend?

TIM BURKE: Well, that's-- that's very interesting. Because they're part of that market price, they would pay that higher market price. That's--that's one of the--

GROENE: So they went out on their own and bought at that higher price.

TIM BURKE: Absolutely. We-- we buy that market price on their behalf, and they pay for that price.

GROENE: And you direct; it isn't a blended price to them.

TIM BURKE: It's not a blended price to them.

GROENE: Thank you. That's one good question-- answer I had today.

TIM BURKE: Very good.

GROENE: All right. And then if-- were you still a net exporter during this?

TIM BURKE: So yeah. Lead-- so I talked a little bit about some of the operational issues that we were having leading up to that weekend. But on the-- on the days where we did the planned outages on the 15th and 16th, we had the capability to meet our load. I think you heard Tom Kent talk about some of the transmission constraints where we were asked, on some of our generation, to back off. And I think in one of the graphs that are in that slide, there's a-- a light blue element in there where we were asked to curtail some generation to support the

broader congestion on our transmission. So-- so-- so SPP and Mr. Nickells can speak more directly to this, is that not only do they-- they really assist in the market management of the energy, but they also make sure that we don't overload the transmission system and create greater and larger cascading-related issues. And-- and so to Mr. Kent's perspective, that was the conversation I had with the present CEO of SPP, as we were seeing some of the generation being backed off at times that we were moving into L2 and L3. And that will be, I think, a deeper conversation and discussion.

GROENE: So it was the same situation with the natural gas, that it wasn't ability to produce, the production. It's--- sometimes it was the-- it was the-- the transmission.

TIM BURKE: Correct. Correct.

GROENE: Congestion [INAUDIBLE].

TIM BURKE: Right. I think it--

GROENE: It's saying here, you couldn't get the power to the areas of the SPPD that needed it because they didn't fulfill their 112 percent.

TIM BURKE: Well, I think-- I think what you saw in the Nebraska information is a-- is a graph that shows Nebraska was a net exporter, right? And so there may be units that were asked to essentially back off generation. And as Mr. Kent talked, whether it was for operating reserve, whether it was for transmission constraints, there's probably a multitude of related issues around that, that-- that we certainly will-- will see in a deeper conversation, a review with SPP.

GROENE: Thank you,

TIM BURKE: You bet.

BOSTELMAN: Senator Wayne.

WAYNE: Thanks for being here. First, what's the diversity of your senior-- senior management and management?

TIM BURKE: The diversity?

WAYNE: Yeah.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TIM BURKE: So of the 10 senior managers I have six females, five males. One male is of Hispanic Latino descent. And another member of my senior team is part of the LGBTQ community.

WAYNE: OK, so there's no African-American?

TIM BURKE: No.

WAYNE: Appreciate it. OK, so I'm a little-- looking at the-- on-- on Tab 9, I've noticed since 2007 to 2020, North Omaha 1, 2, and 3 are really not operating. What's the story behind the coal and natural gas lines for those three lines-- those three-- I don't know what you call them.

TIM BURKE: Yeah, facilities.

WAYNE: Facilities.

TIM BURKE: Sure. So back in 2015 time frame, there was a Mercury Air Toxics Standards rule or regulation essentially in place for the EPA, which required us to either reduce mercury through dry sorbent injection or activated carbon. We did that on Units 4 and 5, and we saw significant emission reductions on Unit 4 and 5 at-- at our North Omaha facility and our Nebraska City 1 facility. We did-- that was kind of capital investments on those assets. We did not do them on Units 1, 2, and 3 because of the smaller nature of those units and just because of the high capital cost on such aged plants. So over that period of time, we did not continue to operate them on coal, but we do operate them on natural gas. And I'll give you an example. I'm not sure if it-- if it goes back to 2017, or for that matter, even 2019. But there was a point in 2019 where we operated North Omaha units. You can see that pretty significant increase in capacity from-- from-- after '17 because of the floods that occurred on the Missouri River, where we essentially had a planned outage at one of our Nebraska City plants. And then because of potential overage of the levee, at that levee down by Nebraska City, we decided to shut down Nebraska City 2 and move contractors out. And so we had all of our peaking generation operating on natural gas. And so during '19, you may see some increases in those peaking, including our North Omaha Units 1, 2, and 3. We also saw that when we had a pretty significant tornado in the Sarpy County area, kind of an F1-F2 tornado that occurred where we began to ran-- began to run a variety of different

generation just because of six transmission lines were essentially on the ground. And so we were able to maintain reliability across our region and obviously coordinated that with-- with SPP as the--

WAYNE: So what's the plan for 1 and 2 then?

TIM BURKE: And so Units 1 and 2, we are going to replace those units. We currently have a plan in place that's called our Power with Purpose Plan, and we are going to replace those units with more efficient natural gas, dual-fuel units with natural gas and fuel oil units, either at our Turtle Creek Generating Station in Sarpy County-- in western Sarpy County-- or our generating station that'll be at about 120th. It's called our Standing Bear Lake Generating Station at 120th and Military Avenue. It's in conjunction with Metropolitan Utilities District. Both of those units will have direct feeds off the pipeline. At North Omaha today, we're behind Metropolitan Utilities District. And even though we're able to operate those units during the summer on gas, we cannot do that during the winter because of the-- because of the capacity of their distribution system.

WAYNE: So we have essentially three facilities in North Omaha that we can't use.

TIM BURKE: Well, we can use them during the summer; and we have. We just can't use them during the winter because of the natural gas constraints. And as I said, we're going to replace those units because we're adding about 600 megawatts of natural gas, dual-fuel capability with those two generating facilities that we're adding.

WAYNE: How many jobs are that? How many-- how many people does it take to run a natural gas facility?

TIM BURKE: Oh, you know, I-- I don't. I'll just give you a quick example. I believe at our Nebraska City 1 and 2 stations, there's probably, you know, 150-plus people there. But we have some central maintenance staff that kind of run across all of our peaking facilities, generating facilities up and down the river, so to speak. At our North Omaha facility, because we still have four and five operating on coal today, we probably have about 100 or so there just because of the nature. It's a little different operation at North-- our North Omaha facility.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: So if everybody, if all of them are running, how many jobs will that be in North Omaha?

TIM BURKE: In North Omaha? Yeah, you know, I don't know. Are you including our operations center that's out by--

WAYNE: I'm just saying--

TIM BURKE: --the airport or just the generating facility?

WAYNE: If you turned on the three-- the three, I want to know how many jobs that would produce in North Omaha.

TIM BURKE: I don't think it would produce any incremental jobs.

WAYNE: OK.

TIM BURKE: We would use existing staff at that facility.

WAYNE: So you mentioned that there was a planned outage on the 15th and 16th.

TIM BURKE: No, there was a planned outage on Unit number 5, started several weeks beforehand, but we accelerated the repair of that maintenance to get that plan up and running as we began to see the temperatures in the forecast become pretty significant on February 14 and 16-- excuse me, February 15 and 16. And so Unit 4, Unit 5-- and Unit 4-- let me back up-- Unit 5, we were able to accelerate that planned maintenance, get it online. Unit 4 had a tube leak. We were able to repair that, have it online. We had Unit 1, had a vacuum seal issue that we were able to repair and get it online. Nebraska City 2, at the same time, had a tube leak. And so we were able to accelerate that outage by using a drone to locate the access and then-- and where the tube leak occurred so we could pre-- pre-engineer, predesign, prework what we needed to do on that Nebraska City 2 station.

WAYNE: So one of the complaints-- I'm-- I'm getting two major complaints during this rolling blackouts in energy conservation. And one was out of Sarpy, where a 911 tower was turned off.

TIM BURKE: Yeah, so it was part-- that was-- I certainly got the same letter that you got, by the way, so from Chairman Kelly. They did have backup generation. So we were in coordination and communication with

our emergency management folks on that. But that's part of the review that our team is doing as of last week and into this week, where there were some of these circuits that we did not have some of that critical infrastructure on. Now we were able to resolve that relatively quickly with them. They were-- they were back up and operating. They did have some operation problems on one of their facilities because their generators didn't work. But those typical-- those 911 centers or-- or emergency centers have backup generation with them, so--

WAYNE: We-- we don't-- you don't know where the 911 is throughout?

TIM BURKE: Yeah, we-- we do. We do know where they're at, and this is part of the plan and the review that we have done.

WAYNE: Well, you said-- you said that you executed it flawlessly. And to--

TIM BURKE: Well, well--

WAYNE: --turn off 911 doesn't seem like it's flawlessly.

TIM BURKE: We did. Well, no, I appreciate that. I think we executed the way the plan was intended to reduce load, to maintain the stability of the transmission system in the grid. So we did that.

WAYNE: And the Sarpy County Jail was also--

TIM BURKE: And the Sarpy County Jail also has backup generation as well. So we-- we have engaged with Sarpy County on that conversation. But I think that's one of the areas we're going to find, in our after-action review, that we're going to have to maintain far more frequently than we do today. So--

WAYNE: So-- so on the days that it was asked to conserve power, your facility was still lit, and Mutual-- and Woodmen Tower had all of its lights on. In fact, they had a colored tower on that made the lights look pretty, because I noticed because I was sitting in my-- my office with all the lights off except from my office light, trying to help. But I looked outside and saw your office and Mutual of Omaha.

TIM BURKE: I don't think you saw our office because we had--

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: It might have been Fraser Stryker below you, but it's your building.

TIM BURKE: Well, it is our building, but-- and there may be people working in there; I don't know that. But I can tell you that, during the daytime we had minimum lighting levels for the folks that were working in there. Our-- our heat-- I-- I was in there. It was-- it was 55 degrees in-- in-- in my office, and-- and I didn't have any lights on.

WAYNE: But your neon light was on-- so I'm just saying your neon light was still on. And so what I'm trying to figure out is, we're asking the customer, but yet you go downtown and it's like completely lit up, right? And so how are you differentiating from you telling everybody-- customers to save, but all the businesses got their bright lights going on at home-- I mean at night?

TIM BURKE: Sure. I-- and I mean, I think this is part of the communication. And again, at the end of the day, you know, we are part of that load-shed plan, but we are asking our customers to voluntarily conserve. And each of those customers had the opportunity to be able to do that.

WAYNE: What is the-- the load that the-- I wasn't going to mention their name-- I would say Highway 370 and 144 cross section. I mean, I don't want to mention the companies' names, but what's their load that they carry off of your system?

TIM BURKE: I would say it's-- it's growing and it's relatively small today, but it's growing, so--

WAYNE: What does it cost to turn it on? I mean, what-- what-- what's the load to turn it on?

TIM BURKE: Well, that's one of the things I will not be able to share, is any specific customer data, so--

WAYNE: Well, did they have a rolling blackout like everybody else?

TIM BURKE: Those customers participated in some of the curtailment activity that we engaged with, with our commercial industrial customers.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: So is that a yes or a no?

TIM BURKE: I would say it's a yes, um-hum.

WAYNE: So they had blackouts. They had to go to generation.

TIM BURKE: They-- they provided-- some of them provided the option to go to generation-- that's correct-- that had the capability. So--

WAYNE: But you told me that--

TIM BURKE: --some of it is still in construction, so--

WAYNE: Right. So you talked to them and gave them the option.

TIM BURKE: We-- we talked with them and had discussions and dialogues with some of those customers.

WAYNE: But the problem is that you're elected by the people, and the people didn't have that same conversation.

TIM BURKE: Well, correct, because they have backup generation. They may not have actually, at that point in time, been-- been on a circuit capable to be able to do that.

WAYNE: But isn't that all the more reason not to have that conversation, whereas people, normal residents, don't have backup generation, but they were told-- you went and told-- some of them were told, some wasn't. You did do robocalls, and I do appreciate that.

TIM BURKE: Yeah.

WAYNE: But they were cut off. And yet these entities who generate a lot had the-- had the kind of conversation about what they were going to do.

TIM BURKE: Well, what-- it-- it was an option. It was, we're moving to a rolling blackout. Do you want to go to your backup generation? And the answer was yes. So they moved to their backup generation.

WAYNE: OK. Power with the Purpose you mentioned. What-- what is-- what is that?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TIM BURKE: So Power with Purpose is really, as-- as we're seeing some load increases in our service territory, it's really modernizing some of our natural gas peaking assets that we have in North Omaha, as I said before. You know, by the end of 2023, we will not be operating those units, but will have the more-- there's-- there's two of those stations I talked about: the Turtle Creek Station, the Standing Bear Lake Station that will have either combustion turbines and/or reciprocating engines. And we're through-- and we're going through that RFP process right now. Both of those stations will be off the pipeline. Both of those stations will have dual-fuel-- dual-fuel capability.

WAYNE: So I'm also getting some complaints about property and growth. We had a bill in Urban Affairs regarding the city of Bellevue, being able to annex around, because the way our annex laws work is it has to be contiguous to a certain land. But you have a Offutt Air Force Base, so they can't annex because technically. So we're changing the law to say you can annex off of Offutt Air Force Base. But I'm also getting complaints that OPPD is buying up a lot of that land down there for-- for solar. And I'm for solar, so that's not my issue. My issue is, how are you working with the cities down there to make sure that we don't hinder the fastest growing county?

TIM BURKE: Yeah. So exactly, with the Power of Purpose, we did have some purchase agreements or options that we had with a variety of property owners, and-- and some of that property was already for sale; it was on the commercial market. And so we engaged in-- in the opportunity to provide those options and engage with a variety of customers, had conversations with the county, the cities, and we essentially removed most of those options. And we did keep a piece of property where customers did not want to move out an option until we had discussion and dialogue with the counties and the-- and the cities in that area. And so we are looking at a variety of other solar options across our service territory. And-- and whether we go back to Sarpy County in an area that's outside of their wastewater agency or not is yet to be known, so--

WAYNE: So which brings a couple of questions for me. So when we-- you decide you want to do more wind farms or solar farms or new generation, your board approves that. But the final say is by the Public Review Board?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TIM BURKE: Correct. So our board approved our Power with Pur-- Power with Purpose plan. And as we get-- so there's a couple pieces that occurs there. We file where we want to interconnect with SPP. We file with the Power Review Board.

WAYNE: So walk slow through this. So-- so can the SPP deny your interconnect?

TIM BURKE: They cannot deny our interconnect, but they can-- they can identify the cost implications of that interconnect.

WAYNE: OK.

TIM BURKE: Are we creating greater issues or are we solving issues? And what are the value and the benefits of that?

WAYNE: OK.

TIM BURKE: And will that-- will that transmission be subsidized by other members of SPP because it creates a greater value for the footprint? The Power Review Board, as Mr. Kent talked about, does have the ability to approve generation because it's really meant to be of generation that's a benefit of the people, benefit of the region, and it's not duplicative. And so it's really to make sure that we just don't have, you know, so many building generation that you can't serve and that you would have potentially stranded assets. And so they're trying to prevent that through the Power Review Board review. And so Power with Purpose, as an example, adding 600 megawatts of natural gas generation, and up to 400-600 megawatts of solar was approved by the Power Review Board.

WAYNE: And then is all your generation in Nebraska?

TIM BURKE: All of our generation is in Nebraska. I-- I-- I would say this: When we shut down Fort Calhoun back in 2016, we did have some contracts outside of Nebraska. But I believe those contracts have either expired and we're moving them in with our Power with Purpose activity, some of them maybe with--

WAYNE: What was the cost of shutting down Fort Calhoun?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

TIM BURKE: Well, the cost-- so that's kind of interesting. When we actually made the decision to shut down Fort Calhoun, there was actually a net benefit, long-term value to the ratepayers.

WAYNE: And that benefit over how many years?

TIM BURKE: Over about 20 years, and it equated to about $750-$900 million dollars over a 20-year period of time.

WAYNE: So how much did it cost?

TIM BURKE: It's going to cost, let's say, about a billion dollars of decommissioning, right? So--

WAYNE: And how much did it cost to improve it after the flood was done?

TIM BURKE: I-- don't know specifically those dollar amounts. I'll be honest with you. I can get those for you.

WAYNE: Thank you.

TIM BURKE: Yeah.

BOSTELMAN: So when you shut down Fort Calhoun, you had just done a power upgrade. And my understanding is from the flood, the FEMA, the feds were going to repay you for the costs that you incurred for that, correct?

TIM BURKE: Not for all the costs. From--

BOSTELMAN: The majority of it, though.

TIM BURKE: From--

BOSTELMAN: The majority of your costs--

TIM BURKE: From 2000--

BOSTELMAN: --from the flood, from the 2016-17 time frame.

TIM BURKE: The '19 flood? So there's some-- I-- I-- I'll be honest with you. I don't-- I-- there is some reimbursement that we get from them, 75 percent of some of our cost, but not if it's a-- I believe

the-- the rules and regulation is that if we have a standing berm that we have there and we don't take it down, we don't get reimbursed from it. So there was some reimbursement. I-- I don't know the numbers off the top of my head.

BOSTELMAN: Then I want to follow up with what Senator Groene and both Senator Wayne said. OPPD decided on-- on your watch, decided to permanently shut down Fort Calhoun Station, which was a firm zero-carbon emitted baseload generation source. If cost was a factor, how was that justified against OPPD's goals of hitting zero-carbon emissions generation and still maintaining adequate, reliable baseload?

TIM BURKE: Yes, so I-- I would say it's in-- it's in direct line with that.

BOSTELMAN: So that was a thousand jobs, average $84,000 per person. So that-- that economical impact to the state is rather significant. So is that figured into that portion?

TIM BURKE: It was. There was some economic analysis that was done around that. The savings from that plant and the reason why that plant was shut down and we began to do the decommissioning activity was really because it was one of the smallest nuclear plants in the United States fleet-- 470 megawatts. It was really an economy-of-scale issue. If I compare that plant to a 1,200 megawatt plant or an 800 megawatt plant, I have about the same number of jobs, 700 at Fort Calhoun. And, and so the cost in this competitive market and footprint that we're in, every megawatt generated was-- was essentially not being recovered through the market pricing.

BOSTELMAN: So fuel load is how they buy-- purchase off of SPP. So nuclear is second on the step. So you go from wind or solar, then nuclear is next, correct?

TIM BURKE: Right. But we have to look at it from an overall cost of operations, so not just the-- just not the nuclear fuel piece, but the overall operation piece. And as our board asked us to review the generation of profitability of all of our generating assets, including our wind assets, that was their directive to say this is a generating asset that's losing money. And it was clear it was losing money in the SPP footprint and our operations in a very, very-- we got one of the

lowest cost markets in the United States, and that's when our board made the decision to essentially close Fort Calhoun.

BOSTELMAN: Sure. Could you provide me that report?

TIM BURKE: Which report?

BOSTELMAN: What you just said, their decision.

TIM BURKE: The generation report?

BOSTELMAN: For the reason that-- their report, their decision on why they closed down the plant.

TIM BURKE: I can-- I will certainly get you the documents that we shared publicly with the board, and--

BOSTELMAN: OK.

TIM BURKE: Sure.

BOSTELMAN: I do have a question with you, with something Senator Wayne asked. And I-- I don't know if I heard you correctly or not. My understanding is, Power Review Board only has the authority to tell public power whether they can add generation or not. It's not whether you can sign a PPA with a source outside of IE, say it's wind, say it's solar. They have no say in that. Is that correct?

TIM BURKE: I think that's correct.

BOSTELMAN: Because it's only--

TIM BURKE: I think that's correct; I'm not sure. I-- I can't even remember if there's a-- if there's a megawatt requirement in there. I'll be honest with you.

BOSTELMAN: Well, I'll tell you there's not.

TIM BURKE: OK.

BOSTELMAN: So that was on that. So to-- what is your ratio of PPA-provided-- provide power versus your own actual generation, that is to state what is the actual generation capacity nameplate that OPPD can provide versus what is contracted by a PPA? And then, what did the

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

OPPD's own generation capacity look like in 2020 versus 2015? And you can provide that at a later time, and so--

TIM BURKE: Yeah, and I think it's in the documents here.

BOSTELMAN: OK.

TIM BURKE: So I think that's all in there, so--

BOSTELMAN: OK. Senator Groene.

GROENE: Thank you, Senator Bostelman. You used a term, you're going to convert those North Omaha 1, 2, and 3 from coal to gas, 100 percent because it's more efficient. What do you-- what's your definition of efficient?

TIM BURKE: You know, we couldn't operate them on coal due to-- due to environmental regulatory standards. And it was the primary--

GROENE: Because of the policy of your board or because of--

TIM BURKE: No. It's the federal policy of the Mercury Air Toxics Standards regulation through EPA.

GROENE: So you didn't do the stack cleaners and stuff like they got at Gerald Gentleman.

TIM BURKE: That-- these were relatively smaller units. And the-- the cost-effectiveness of doing that on plants that are 70 years old is-- or older-- was just not economic [INAUDIBLE].

GROENE: But you have that at-- at Nebraska City 1 and 2.

TIM BURKE: We have done that at Nebraska City 1 and we have done that at North Omaha 4 and 5, where we put in activated carbon and dry sorbent injection. Nebraska City 2 has the best available control technology.

GROENE: So it's not an efficiency thing. It's more of a reliability thing because coal-- we can't get any more reliable coal and there's no-- no competing use for it, like keep people's houses warm as gas is. And I understand that's why-- part of the reason that gas became short, because number one, they at least-- they tried to keep people

warm that had natural gas instead of electricity. But as to the study, you said-- on Fort Calhoun, you said it-- the study said it was not-- how would you call that-- not economically feasible. It was not the best economic decision source. What was that based on, on a wind power that was the-- was the federal subsidy that's not reliable 20 years from now or 5 years from now? Was that factored in?

TIM BURKE: No I don't--

GROENE: Or was that taken out when-- when you factored in that wind might be a better [INAUDIBLE]--

TIM BURKE: Yeah, there were several. Yeah, there were--

GROENE: --purchase than nuclear?

TIM BURKE: Yeah, there were several elements in that. I'm going to go back to 2009, when we brought our Nebraska City 2 station, a 660 megawatt coal facility. And we built that facility with a variety of partners. And we built that because we saw demand growing at 2 to 3 to 4 percent a year. And so as we began to operate that plant, what we found is we probably had more capacity than we needed. And-- and so we didn't need all the capacity. And as we looked at the competitive nature of those units, it was the Fort Calhoun unit that we identified was-- was the unit that, in order to do a number of different things, that was the unit that we needed to close, to--

GROENE: To open a coal plant.

TIM BURKE: --begin that decommissioning process.

GROENE: Just a curiosity. Is that one of the last coal plants built in the United States?

TIM BURKE: I believe it was. There was one. I think its sister plant was down in Alabama or Arkansas-- Plum Creek.

GROENE: Just got under the wire. Thank you.

BOSTELMAN: Senator Cavanaugh.

J. CAVANAUGH: Thank you, Chairman Bostelman. Thank you for being here, Mr. Burke.

TIM BURKE: You bet.

J. CAVANAUGH: I want to kind of get back to the reason that we're here. It seems like there's a lot of conversation's kind of going off. First off, the peaking demand at this point was as a result of increased heating needs, correct? Is that--

TIM BURKE: I-- I would believe that would be the case. Sure.

J. CAVANAUGH: So I mean, in my house-- I guess I have a furnace which seems to run on natural gas. But when my power went out-- so thank you, I did get the-- the phone call and the-- and I got that at about 10:00 the night before, and my power went out at 7:00 the next morning, so I had, you know, a good amount of lead time. But it runs on natural gas, but it operates because of the forced air, right? So my heating stops working when the power goes out.

TIM BURKE: You bet.

J. CAVANAUGH: Does that sound about right?

TIM BURKE: Yep.

J. CAVANAUGH: So most people in Omaha-- is-- is-- do you under-- is-- is there a lot of people that are in my situation or is there a lot of electric heat in Omaha? What's the reason?

TIM BURKE: There's probably-- I mean, there's probably a mix. There's probably, you know, 10 percent of the homes have probably heat pumps and probably 90 percent are more natural gas with air conditioners. It may mix depending on neighborhoods and areas and those kinds of things, but--

J. CAVANAUGH: And generally we're a summer peaking--

TIM BURKE: That's correct.

J. CAVANAUGH: That's because we run-- the air conditioning is really the big demand in summer.

TIM BURKE: Absolutely.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

J. CAVANAUGH: In the wintertime, a lot of people have like MUD natural gas like I do, right?

TIM BURKE: That's correct.

J. CAVANAUGH: So I guess one of the questions is to-- going forward, obviously, this could potentially continue to be an issue. You know, this is something that we weren't-- this is a one-off, right? This hasn't happened before. We've had this huge cold. Are you looking towards weatherizing the programs, increasing efficiency? I know I have the thermostat--

TIM BURKE: Sure.

J. CAVANAUGH: --that you can turn off in the summer and it does it, you know, whatever, a dozen times in the summer, something like that. Is there a similar program for the heat, the heating in the wintertime, weatherization?

TIM BURKE: Sure. We've done-- we've done a variety of things around energy conservation measures, whether it's-- whether it would be, you know, insulating. We do have some low-income assistance programs that we have. We have a variety of--

J. CAVANAUGH: Is that like LIHEAP or is that--

TIM BURKE: It's not LIHEAP, no. It's-- it's part of our initiative where we use some funding to help support that energy conservation-related activity. So we have a variety of products and service programs around conservation, demand reduction, whether that's increased efficiencies on air conditioners. We also have our-- our demand, our-- essentially demand control where we actually have controllers and/or thermostats that actually control air conditioners during the summer where, if we're running up to a new peak, we can actually allow those to operate and cycle those compressors over-- over a period of time. And we've seen that to be just incredibly effective for reducing our summer peak. Those compressors on air conditioners don't really help in the winter at all. And so, you know, we have not engaged on the thermostat program about what we would do in the winter. And I think you're going to see us begin to develop something around that. And-- and so but we're going to continue to do

our work around energy conservation and demand-side management initiatives, as well.

J. CAVANAUGH: I've-- so I heard a little bit of conversation about-- well, this, I guess this is a little bit more far afield, but there's nameplate capacity and accredited capacity.

TIM BURKE: Um-hum.

J. CAVANAUGH: Are you capable to-- are you the right person to ask about that?

TIM BURKE: Yeah, well, I think so, but I-- from a system side, so, you know, typically on renewable generation, there are some elements where you actually have to establish, based on actual experience, the capacity of a-- of-- of a-- of a wind farm or a solar array. Typically, natural gas typically has a much higher accredited capacity that we are required to share with SPP. So we meet not only our-- our peak demands, but also that 12 percent reserve element. And so those capacity factors are really determined based on the operation of those units over a period of time.

J. CAVANAUGH: So I-- I'm sorry. The-- the accredited capacity has to do with that, that 12 percent over your-- your peak demand, right? So that's what we're talking about, is you have to maintain an accredited capacity above your peak demand [INAUDIBLE].

TIM BURKE: That's correct, by 12 percent.

J. CAVANAUGH: So I'm just looking at-- they have-- you have a [INAUDIBLE] here where accredited capacity of the SPP is actually lower than the nameplate capacity. So--

TIM BURKE: That's correct.

J. CAVANAUGH: --the accredited capacity is-- OK, I'm-- I'm with you on that. So the question that kind of had me thinking about was, we have a certain accredited capacity of all of, say, OPPD, right? And you're talking about they called you and said you need to curtail by 68 megawatts, right?

TIM BURKE: Um-hum.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

J. CAVANAUGH: Or I think [INAUDIBLE].

TIM BURKE: 63.

J. CAVANAUGH: Yeah. And then you could-- that was based off of your-- in relation to your accredited capacity?

TIM BURKE: Yeah. So that was-- that was-- yes. That-- that was based on-- and Lenny Nickells can share the specifics on how they made that determination. But OPPD is a percentage of an overall SPP kind of footprint of capacity, and it was based on that capacity that we were having to reduce. And so ours is, I believe, 2.5 percent or something like that, that we were part of that overall piece of curtailment that was required.

J. CAVANAUGH: But if they went out to those individuals who then had their own ability to produce, I think you talked about some of those sites rights and other folks talked about that. Could that have taken in-- even into your requirement or did we not get credit for that?

TIM BURKE: Well, you get credit as we began to plan for those days. I mean, some of those customers, as we began to ask them to begin to reduce loads, began to do that much earlier than the 15th and 16th. So some of them started that weekend and began to operate that way. I was just recognizing that on February 16, we had about 126 megawatts of that commercial industrial load, but that-- that helped reduce other outages within OPPD and potentially even across the footprint.

J. CAVANAUGH: Oh, thank you.

BOSTELMAN: Senator Groene.

GROENE: Thank you. So looking at page 9-- thank you, Chairman. And you've been very-- you understand you guys have run the things. You're getting a lot of the questions that we'd love to ask the people who are elected on board that make these decisions. You just have to operate. I understand that. So looking at that wind that your-- your Broken Bow 2 wind is the only one that tops 50 percent net capacity.

TIM BURKE: Um-hum.

GROENE: So when you go out and build capacity, you've got to build two windmills to get one-- one nameplate capacity, actually what you get to use. Is that what I'm reading here?

TIM BURKE: Well, so these are-- these are net capacity factors. What--

GROENE: [INAUDIBLE].

TIM BURKE: --we would look at with-- and again, Lanny Nickells would be really a great one to talk about this, because that's how they look at the whole system. And so what we would look at is the contribute-- contribution to capacity at our peak. So how does wind, whether it's Broken Bow or any of the other ones or any of the other assets attribute to that capacity?

GROENE: It's not on capacity, net capacity.

TIM BURKE: No. That essentially says that it operated about 51 percent of the year.

GROENE: Well, do you have any numbers about the nameplate versus if you got two and a half megawatt windmills?

TIM BURKE: Yes. We can-- we can certainly share that with you about what that nameplate is.

GROENE: When you build the wind-- when you buy wind, when you make a buy from a private individual, I understand why you do that. They get the federal credits. You can't get them. But-- and they say we're going to build a 100-megawatt farm. What do you expect to get out of that? How many megawatts in there?

TIM BURKE: About 51 percent of that, if it's a Broken Bow facility. So out of that 100 megawatts, over the course of that year, I'll get about half.

GROENE: So what do you-- in your 112 percent, what number do you use, the 100 megawatts?

TIM BURKE: It's-- it-- it would depend on the operation of that unit during a peak day. So during a peak summer day--

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: So when you report to SPPD your 112 percent, is it nameplate capacity that you got to be 112 percent of what-- what, over time, you--

TIM BURKE: Not nameplate; it's operating capacity where we have to-- we have to generate our assets. When-- when we're asked by SPP to establish our accreditation, I have to take a unit and put it online to-- to determine to them--

GROENE: So is that what happened?

TIM BURKE: --that I can--

GROENE: Is that what happened? Some of the individuals in the SPPD, that part of the 112 percent was over-reliance of wind, and the wind didn't blow?

TIM BURKE: Well, I-- well, I-- I think there-- that's again, a very, very small capacity factor. I-- I believe what we will see in-- in the review of this is that we saw some pretty significant reductions in natural gas capability in the SPP footprint, and that could be either frozen-off wells, frozen-off pipelines, generators that aren't weatherized or have dual fuel like we do here in Nebraska, as you've heard both Kevin Wailes and Tom Kent talk about. And-- and I think that is going to be part of the deep review that's going to be done, and we're going to identify those issues.

GROENE: So you're going to identify how much-- how reliable, how much you allow a member to claim that wind is part of their 112 percent, but it isn't reliable?

TIM BURKE: Well,--

GROENE: [INAUDIBLE].

TIM BURKE: I think that-- I think that'll be part of that. Yeah, absolutely.

GROENE: All right. Thank you

BOSTELMAN: Senator Wayne.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: Sorry. I just-- beautiful thing about the Internet is I just-- it cost $1.5 billion to decommission. But we spent $385 million in 2006 to refurbish the plant, plus another $100 million to repair it after the flooding. So we're at-- we're at half of a billion to keep it licensed. And-- and the reason why this is relevant to me is when I look at the load capacity-- I'm trying to find this sheet again. But OPPD was not exporting during the 15th. We were actually--

TIM BURKE: Yeah, but if you saw that blue line in there, we had the capability to export, but because of the transmission congestion or because of-- as Mr. Kent talked about-- there was times on those in that area where we were asked to back off our generation. And I think you see that in some of the-- some of the capacity factors on some of the generation.

WAYNE: So but you're saying that on the 16th-- and I'm looking at this, the generation we dropped, you're saying that in the time that we're supposed to be sending down more energy, we were told to back off energy.

TIM BURKE: That's this unique anomaly that we have asked SPP to spend some time and energy around, and for us to understand that. Was it because that we were, you know, essentially over-delivering on the transmission system and creating some operational issues on the transmission system? Was it for us to maintain operating reserves for other elements within SPP? We-- we don't have all that information, and that's part of the review that they're going to do, part of the questions, certainly, that we're going to be asking in that process

WAYNE: Is there a capability to isolate the grid?

TIM BURKE: There is capability to isolate the grid.

WAYNE: So can Nebraska-- so can SPP-- can you isolate yourself from the SPP grid?

TIM BURKE: I-- I think there's capability to be able to do that. I think there's a significant risk in doing that.

WAYNE: Well, what I'm saying is at this time that they're telling you to back down, you could have stayed up.

TIM BURKE: Yeah, I'm not-- I don't think it's that simple.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: That's what I'm at-- well--

TIM BURKE: I don't think it's that simple.

WAYNE: Let me get-- let me get to the question.

TIM BURKE: Yeah.

WAYNE: If you-- they're telling you to back down and send south for congestion purposes, my-- my question is, is there a capability to isolate yourself, to keep running here in Omaha, and not send so much down?

TIM BURKE: So we-- we-- we saw some, as an example in a-- in a different RTO where a southern area of an RTO had unplanned outages, but the northern side didn't. It was MISO. So what's different in that than what we were doing? And that's part of that. That's part of the review that we've asked for. The three CEOs that are here today: Kevin Wailes, and Tom Kent, and myself, essentially sent a letter to-- to Barbara Sugg, the CEO of-- of SPP, asking, you know, for us and our members to be part of that review process, just for us to understand all of that. Are there things that we don't have that information that we need to have as we move forward? And are there changes that need to occur? So we'll-- we'll find that out. It's preliminary for us to speculate on that, but we'll get to the facts on it.

WAYNE: Do you think it's time? This is an unfair question, but do you think it's time that, since in 2014, the market changed, allowing you to participate in the SPP market and, prior to that, we really haven't had significant legislation except for the removing of wind from the Power Review Board, which I think is significant in not necessarily a positive way. But do you think it's time for the Legislature to review the entire public power system and see if, with the times and the grids and the market, we should do something different?

TIM BURKE: Well, I don't-- I don't believe so. I think we provide exceptional service from an affordability perspective, from a reliability perspective, from a-- from a service perspective. You know, I get the opportunity to sit in-- in a variety of customers' businesses. And-- and I think you've heard it from a couple of people today on-- on the reliability of their operations in other parts of the country. And-- and I will tell you, you know, the companies that

are locating here are seeing Nebraska-- and just not the ones that may have been referenced here today-- but a lot of them it's because of the reliability. It's because of the capability to serve, and it's because of the-- the service that we provide. I think that's a model that fits very clearly with our mission of affordable, reliable, and environmentally sensitive.

WAYNE: But you would agree that there are many people across the state of Nebraska today who don't necessarily think public power is reliable after these incidents.

TIM BURKE: Yeah, but I think they have to understand the bigger picture, and it's just not public power. I mean, there were 14 states of investor-owned utilities, co-ops, municipalities that were impacted.

WAYNE: So I agree with you. I'm not disagreeing with you. But to the-- to the point, do you think we're not doing our due diligence as a body who represents Nebraska, who gave you the authority to do things that now the market has changed? We should not do a deep dive and review whether there should be one entity, whether we should have generation. I mean, clearly, we're allowing private developers to do wind generation. So do we need public power in generation? You don't think that's a conversation this body, as a Legislature who oversees the Nebraska system, should have?

TIM BURKE: I-- I-- what I think is-- is you heard Mr. Kent talk about it. I think the Legislature has great authority over the statutes to do that. I personally believe the due diligence of our board in the review of the work that we do is-- is pretty significant and pretty critical. And I know that this group may or may not be able to see that on a day-to-day or ongoing basis. But I can tell you that the criticality of our board and our work and our efforts is pretty significant. And-- and I'm only seeing that increase with the board and how they're engaging. So--

WAYNE: So I represent a district that is around coal plants, and we have some of the highest asthma rate, but we have immunity for public power in the sense that that's not a-- that there's nothing you get from that. I mean, you don't get-- they just got to deal with it in the state, whatever that costs. I mean, there are lots of things that

happen with public power, particularly in my district, that affects us that we pay for all the time. What's your thoughts on that?

TIM BURKE: Well, I-- I think I-- I would tell you back in 2014, when our board made the decision to begin to look at North Omaha, that was certainly one of the factors that they were thinking about. And so and that's why we put pretty significant control mitigation on Units 4 and 5 that have significantly-- and I'd be more than willing to share the significant reductions we've seen in-- in the emission elements in Units 4 and 5, and then the closing and only operating on natural gas Units 1, 2, and 3. And ultimately 4 and 5, at some point in time, will move to natural gas. And we'll look at other capacity-related options in the-- in the future.

WAYNE: Thank you.

TIM BURKE: Um-hum.

BOSTELMAN: So I guess going-- oh, sorry. Senator Moser, go ahead.

MOSER: Well, to be fair, natural gas had its issues, too, during this outage. We don't have storage for natural gas of any great quantity. I mean, it's pretty much we go by with what we can pump and what we-- is in the pipeline. I mean, we don't-- they do store at some places, but it's--

TIM BURKE: Sure.

MOSER: It's not-- I mean, we're-- natural gas doesn't go out generally, I mean, like the electricity shuts off, but still it's a finite resource. And they had problems pumping natural gas in Texas. And that contributed to the problem.

TIM BURKE: We-- we had firm-- firm contracts in-- in this footprint, firm contracts in natural gas that were curtailed because of forced reserve, because of freeze-offs, because of frozen capabilities and operational capabilities.

MOSER: Are you on-- on interruptible supply with natural gas?

TIM BURKE: We-- we are because of our-- we do have some firm capability at our Cass County facility, in some of the arrangements

that we have with MUD in some of our Cass County. But most of it is interruptible because we have the dual-fuel capability.

MOSER: And you know, when they talk about, you know, just cutting Texas loose, let them go to zero in, you know, their voltage or whatever, could there be a time when we'd have a windstorm here and we wouldn't be able to generate enough power to keep our grid up and running and we might need the power from the Southwest Power Pool?

TIM BURKE: Well, so the example that I gave a little bit earlier-- and Senator Moser, I'm not sure if you were in here-- but when I talked about some of the operational issues a week before February 15 and 16, where we had a planned outage going on at our Unit number 5 in North Omaha, and then we had a boiler 2 failure, Unit number 4. And then we had a outage on Nebraska City 1 and Nebraska City 2, relatively a couple of days apart, we were able to get them on before the really critical peak cold days that we had on February 15 and 16.

MOSER: Yeah, I recall you talking about that.

TIM BURKE: So when we did that, we-- we were a net-- a net importer of energy in SPP. And that's the value. If-- if we would be operating on our own, we would have had to, on those unique kind of opportunities where it isn't a planned outage, where it's a forced outage, where it's something happens that forces you out very quickly, that we would either have to make arrangements to the grid or to the market in-- in a previous life. Now, we essentially rely on the SPP footprint, just as Tom talked about, from NPPD, when Cooper Nuclear Station may go out, an 800-megawatt plant, they're supported by SPP in that regard. That's the generation-sharing value of SPP, not just the transmission-sharing capability and the balancing authority from a stability perspective, but also the generation value and benefit.

MOSER: I was talking to a friend of mine who's involved in the power industry-- and I don't want to get too far in identifying him and getting fired for leaking information out. But I asked him a question.

TIM BURKE: Is he with my company at all?

MOSER: What's that?

TIM BURKE: No, I'm just joking.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

MOSER: Is he working for you?

TIM BURKE: Yeah, I don't know.

MOSER: I'll give you 20 questions.

TIM BURKE: After this, maybe.

MOSER: You'll-- no, you'll get it in 20 questions.

TIM BURKE: Probably right.

MOSER: I know you will.

TIM BURKE: Fair enough.

MOSER: But I asked the same thing, I think, that Senator Wayne was asking, you know. Why do we have to sacrifice ourselves for people who have a problem? Sometimes the problem isn't even an act of God. Sometimes part of it is their own stu-- their own ineptitude or lack of planning. That sounds better than stupidity. But-- and he said there are so many interconnections between our distribution system and the others, that it would be really difficult to separate them. And he said the balancing-- I don't know how many of the board members know about three-phase power, but the electricity goes from negative to positive 60 times a second. So it goes positive, negative, positive, negative, OK? So that's-- and that's just one waveform. Then power is three phases and they're all-- well, for the sake of argument, 120 degrees apart. One of them's a little more or less-- for whatever reason, I don't know. But to keep all that stuff in synchronization is quite a juggling act.

TIM BURKE: It is.

MOSER: And so to go trying to disconnect, you'd have a heck of a time getting that back hooked up again and synchronized so it works. So it's a really-- I don't think we appreciate that. I mean, we-- we bring you here and make you sweat; I get that. But the complexity of the problem that you work on every day is beyond what most people realize. And I appreciate everything that you and your employees do.

TIM BURKE: Yeah. Thank you.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

MOSER: And you know, I would have said that to my NPPD guy, but he only lives a mile from me, so I don't want to praise him so much. I'll pick you.

TIM BURKE: I'm the one who's hurt. So I'm the one who's had a bad couple of weeks. So now I appreciate that. It's the reason why I started this, saying that's not what we do in the public power industry. We don't like to disconnect power. We don't like to-- to implement our load shedding. That's-- that's not what we do. But we really alleviated, I think, a pretty significant event because of the collaboration, the work, not only within the state, but within the SPP footprint that really valued Nebraska over, you know, an hour outage over the course of a couple of days by some-- by some, you know, folks, including me, right? Including me and my family, my kids, you know, and those kinds of things. So--

MOSER: I was without power, too.

TIM BURKE: Yep.

MOSER: And you know, we had to get the flashlights out and the candles out. You know, it was annoying that-- luckily, that's all the problem was for us.

BOSTELMAN: Senator [INAUDIBLE].

GROENE: During all this in the middle of the night, did you ever wake up and tell yourself, thank God for coal?

TIM BURKE: Thank God for coal? You know, I-- I wake up a lot in the middle of the night and it's usually about the safety of our employees in all the work that they do. That's when I wake up at night. I-- I know that--

GROENE: When you had your emergency, did-- were you worried about your coal plants or were you trying to worry about your natural gas and your wind?

TIM BURKE: I'm-- I'm-- I worry about all of those. I think it's important to have a diversified portfolio over a long period of time. And I think we're going to continue that work with the understanding that it has to be resilient, right? It has to be resilient during these most critical times. And I think we're building a system--

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: But that's the argument-- that's the argument you tell your board when they want to go zero-carbon,--

TIM BURKE: No, we-- we--

GROENE: --that we have to-- you have to have a diversified, into the future, sources of power?

TIM BURKE: Exactly. We've talked in great lengths and conversations with the board about resiliency. You know, reliability is whether a unit's on or breaks or those kinds of-- resiliency is about, how do you-- how do you operate during severe events? And I would consider this one of those severe events. I would consider the flood in '19 a severe event, the tornadoes in '17 in Sarpy County as severe events. And how do we bounce back and be able to balance that-- that critical infrastructure that-- that Senator Moser just talked about? That's what I worry about, and the men and women that are in that every single day.

GROENE: Both those events-- and when we talk baseload, would you say you were always-- your baseload was always reliable coal?

TIM BURKE: Yeah, well, I think all of our generation, our-- our coal-- I mean, I think you see on the charts our-- our coal generation. Once we repaired some of the-- some of the faults, some of the failure-- two failures-- they came up and operated. Our natural gas and fuel oil units operated very reliably. I mean, we had a couple of operational issues because it's cold, and a lot of metal doesn't like cold, right? But we were able to work through that and-- and work through that. We saw wind on the 16th begin to pop back up in the market. So specifically, in--

GROENE: You do understand Gerald Gentleman is in my district and UP hauls more tons of coal than anybody in the world. And it goes--

TIM BURKE: I understand that; I understand.

GROENE: North Platte. Thank you.

BOSTELMAN: OK, thank you, Mr. Burke.

TIM BURKE: Thank you.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

BOSTELMAN: Really appreciate you being here today. I think it's interesting, Senator Wayne's comments of review. Are we looking at appointments to the CEOs or the board members, especially in the diverse power mix that we're looking? Things have changed a lot so maybe our board of directors need to be more of appointment to skills type thing to understand that. But anyway, that's a subject for another day, a topic for another day. So with that, I would invite Mr. Nickell, the executive vice president, chief operating officer of SPP, to come forward because really where we're at now in this hearing is-- is why. We've heard about reliability. And obviously we've had a huge reliability issue in the state, very much so a concern of us. So we want to understand what happened and why it happened and your perspective from SPP. And we're glad you came up. It's probably a little bit, I don't know, maybe today it's warmer than it is or where you are, where you come from. Maybe you're a lot warmer down in Arkansas did you come up from?

LANNY NICKELL: Little Rock, Arkansas. Yes, sir.

BOSTELMAN: Well, welcome. Thank you for being here today.

LANNY NICKELL: Thank you. And let me get the formalities out of the way. I'm Lanny Nickell, L-a-n-n-y N-i-c-k-e-l-l, and I am the chief operating officer for Southwest Power Pool. And as we've just discussed, we are based in Little Rock, Arkansas, have an employee base of about 650 people, none of which enjoyed what we went through two weeks ago. I think that's a common theme that you've already heard from-- from everybody that's been speaking to you today. This is not something we enjoy. We train for these kinds of events that we never expect to have to go through one of these. And so let me just begin by saying tip of the cap to Senator Moser. I actually think I've learned some things just over the last several minutes about how the electric power grid operates so very, very much want to acknowledge the fact that you've expressed some technical terms that's been a while since I've heard so. And thank all of you for the chance to be here. I hope that I can help. I hope that I can inform. And just to help describe and help you understand what we saw, what we experienced, why we did some of what we did. And there's going to be some things I probably can't answer. There's some things that we're still trying to figure out. We're gathering data. The data that we have is voluminous, and so we're going to be working on that for a long time. But hopefully I can help and I'm happy to answer any questions. I want to try to hit this

at a fairly high level. And I know that from some of the speakers that went before me, they've-- they've kind of teed up some questions for me. And since the baton is now in my hand, I'm more than willing to-- to try to answer as many of those questions as I can. As has already been mentioned, we are a regional transmission organization, one of seven in the United States, seven RTOs is the acronym or independent system operator is the other name that some of our neighbors go by. We're an RTO. ERCOT, for example, as an ISO. Midcontinent ISO is one of our neighbors to the east, so they refer to themselves as an independent system operator. But we're generally the same in a lot of ways. There are some differences. Our stakeholder environment, our culture is-- is one of the things that we believe sets us apart from some of our other neighbors who do what we do. And I think you heard some of that from Mr. Kent, that, you know, the decision the Nebraska entities made when they joined SPP, it wasn't just about the value. Certainly the value of joining our organization was a key part of that, but also the fact that they have the opportunity to be engaged in the decision making of our organization, the policies that we establish that have to comply with either the Federal Energy Regulatory Commission's rules or with the North American Electric Reliability Council's reliability standards. There's a lot of-- there's some room to operate within those criteria, within those standards. We have to figure out the details of how we do that, and our members help us do that. They're very engaged. And because they get to be engaged and have a vote in a lot of our decision-making processes, I think that is also part of at least what they've told us they appreciated about joining SPP. We do operate across 14 states. I heard earlier that, you know, that that footprint begins as far south as Texas, goes all the way to Canada. I do want to clarify, we only cover a part of Texas. It's the Panhandle of Texas and northeastern Texas. The rest of the state of Texas is covered either by ERCOT, actually, predominantly ERCOT is the other organization, which is an acronym that stands for Electric Reliability Council of Texas, and then MISO, our neighbor to the east, Midcontinent ISO covers a little bit of Texas as well. But we cover Nebraska, most of Nebraska. We cover Kansas, Oklahoma, part of Missouri, part of Minnesota, North Dakota, South Dakota, Iowa, Wyoming, Montana. I'm-- I'm having trouble counting. I hope that adds up to about 14, a little bit of Louisiana, part of Arkansas-- how dare I forget Arkansas-- and a little bit of Missouri. So those are the 14 states that we operate and we do perform multiple functions. You've heard some of this already, so I'll try to

just hit it at a high level. You heard about the balance and authority function that we-- that we perform, and that is, again, to ensure that there is continuous balance between supply and demand. And that is something that we look at every two to three seconds. I mean, it's just continuous. We have tools that monitor that. And when it goes out of balance, we have actions that we can take if that imbalance is severe enough, that would warrant that action. We also act as the reliability coordinator, which means that we're continuously monitoring the state and the health of the grid. We're performing what we refer to as contingency analysis, which is really kind of a what if scenario. What if you lose this generator? What if you lose this transmission line? What would the impact be on the system? We're doing thousands of those contingencies every four minutes. We have the tools that allow us to do that analysis. And then if there's issues, that, that information is passed on to our operator so that they can take corrective action. We like to use the analogy of acting as air traffic controller for the electric industry. You know, much like the air traffic controller for the airline industry who doesn't own the planes, they don't own the airports, they don't own the sky. They just direct the planes to get from one point to another reliable. That's what we do with energy. We don't own the transmission lines. We don't own the generators. We just make sure that generation that is produced is delivered reliably across the transmission network that we're responsible for, for monitoring. So that's kind of a little bit deeper explanation about the air traffic controller responsibility that we have to keep the lights on. So really two aspects of that reliability, responsibility that we have. And it's a responsibility that has been really delegated to us by the Federal Energy Regulatory Commission. You've already heard that we're subject to penalty if we violate the standards that are applicable to us, just as the member utilities that spoke earlier are subject to penalty if they violate standards applicable to them. We have a membership agreement that requires our members to abide not only by SPP's criteria, but also the North American Electric Reliability Standards and the Federal Energy Regulatory Commission approved tariff that we have. I want to start using FERC and NERC so that it rolls off the tongue a little bit better. So that-- that-- that is the agreement that binds us to those obligations. Whether they were members of SPP or not, they would still be subject to North America-- to NERC reliability standards. So I want to make sure that's understood. Just-- just being a member of SPP doesn't add new responsibility. In fact, it takes away some of that

responsibility. If we didn't act as their reliability coordinator, if we didn't act as their balancing authority, the utilities that just spoke would have to be subject to those additional obligations under the NERC reliability standards that today we have. OK, so somebody that acts in the electric industry has to be responsible for complying with those standards. Our members years ago saw benefit and value in centralizing some of the functions that we perform. And that's why we do that. It's not because we stepped up and said we want to do this. Our members said, we want you to do it because there's value in that. There's value in synergizing and coordinating that and centralizing it. So that's-- that's a little bit about who we are. We also operate a market. And again, that market, we don't take ownership of the power. We rely on the generators that operate in our footprint to-- to tell us what they can generate power at, what price they can generate it at. We choose the cheapest generation available. It doesn't matter if it's generation in North Dakota or generation in Arkansas or generation in Oklahoma, we're going to choose the cheapest, and that generation is going to be delivered reliably to load, no matter where that load is. It could be that Nebraska can get cheaper generation in Oklahoma. And if that's the case based on the price information that is sent to us, we will dispatch those instructions accordingly. So that-- that is the market administration job that we have. Again, it's just to make sure that energy is delivered on a wholesale basis in the most affordable, reliable way possible. So let's talk a little bit about the event. I'm not sure if I can add a whole lot to what you've already heard, but-- but I will try to touch on some of the critical aspects of it. You know, as most of us did, we were paying attention to the weather forecast. We knew that there was a weather event coming, and we issued what we refer to as a cold weather alert to our members on February 4. That was a little over a week and a half prior to when things really started getting bad, when we started to have to issue the service interruptions. And again, we all knew something was coming. We didn't know how severe it was going to be. We didn't know it was going to end up being the unprecedented cold temperatures across 14 states. And actually more than that, because some of the states to our east saw unprecedented temperatures as well. We didn't realize it was going to be that bad, but we knew it was coming. We knew something was coming. So we started over a week and a half prior. And then we issued what we call conservative operations alerts, which again, is just more of a heightened awareness that we want our members to take so that they can start doing what they need to do. That was on

February 8. And then on February 11, which was the Thursday before the Monday and Tuesday that we had to interrupt load, we began to actually commit those generating resources that require longer lead times in order to be able to start and be available. We knew four days in advance that this was actually going to unfold and could be really bad. Our weather, our load forecast for Monday and Tuesday let us know even then that this could be a new winter peak for us. And so we begin to issue those directions. We've never done that far in advance, those kinds of commitments. We committed everything we could back then. And so Wednesday-- or Thursday going into Friday morning, we were committing generation for the weekend, for Saturday, Sunday, and Monday to try to make sure that we had enough supply to meet what we expected to be the demand during the 15th and 16th. On February 14, we-- we issued or asked our utility members to begin to start issuing public appeals for conservation. We didn't have to do it then. The NERC standards actually don't require us to do that until we proceed to where we're in an energy emergency alert level two. But even before we called the EEA 1, we wanted to get ahead, and so we asked our members to do that and many of them did. I pay attention to some of their Twitter accounts. I was, I was kind of following along and watching, and they were doing everything they could. And I think it helped. I want to give credit not only to our member utilities who coordinated with us and collaborated very closely, but also to the consumers. I think the consumers helped tremendously. Now, I don't know exactly how much help they provided because it's kind of hard to know what the load would have been, what the demand would have been without their action. But-- but we asked more than 24 hours in advance for that. We think it helped. Monday morning rolled around and we survived the peak actually. The winter peak-- winter peaks usually occur in the morning, sometime between 7:00 and 10:00 in the morning is usually when they happen. We survived that until about 10:00 when some of the energy that we were importing from our neighbors, which, by the way, I want to thank our neighbors, because without them sending excess energy to us, this situation could have been a lot worse. But some of those imports began to be interrupted because they were experiencing congestion in their system and tight supply conditions on their systems. And as that happened, as we began to experience reductions in imported energy, mostly from the east, a little bit from the west, then we had to proceed into the energy emergency alert level three, which means we no longer have our reserves and it's possible that load shedding is imminent. We didn't

curtail load immediately. That happened, at least on the first day, it happened a couple hours after we first issued the EEA 3. And when we did, we had to curtail for about 50 minutes about 1.5 percent of our total demand across the 14-state region at that time. And then Tuesday rolled around. We already knew that Tuesday was probably going to be a little worse in terms of demand. We expected demand to be a little bit higher than it was Monday. We were hearing from our neighbors, the neighboring systems, that they were experiencing the same thing. And-- and we saw a little bit less imported energy on Tuesday as well. So that caused us to have to curtail about 6.5 percent across the 14-state region of our-- our demand at the time. And it lasted for a little over three hours. So, again, nobody wants to do this. We-- we've been around since 1941. We're-- we're an organization that was created as a response to the war needs for aluminum. And the utilities that existed at that time saw benefit in pooling their resources together to serve an aluminum plant in Arkansas. And they stayed together since then because they recognized the benefits of working together, of pooling their resources. In 80 years, this is the first time we've seen these kinds of weather conditions that permeated the entire 14-state region and that caused us to have to take the actions that we took. So it is unprecedented in that regard. Does that mean it'll never happen again? No, it could. It could very well happen again. Hopefully not as bad, but it could be something different. It could be tornadoes, it could be icing. There could be any number of things that can occur that we need to be prepared for. So we're going to work diligently over the next several months with our members to do a lessons learned and a comprehensive review of this event. And there's going to be a lot of discussion, a lot of debate about things that we need to do better. I do think that even though we did the best we could to minimize the impact of this-- and thank God for interconnections, because if we didn't have them, we could have been a lot worse off. But there are things I know we can do better, and I think we will-- we will discuss those. We'll find out what those are and we'll report on that in July with recommendations. So I'll just say, I'll end by saying I do-- I believe with my whole heart that we are stronger by working together. We achieve more by working together. And we can protect against major crises much better by working together than if we ever tried to do something like this alone.

BOSTELMAN: OK, thank you, Mr. Nickell. Are there questions? Senator Hughes.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

HUGHES: Yes. Thank you, Mr. Nickell, for being here today. We appreciate your traveling coming up to see us. So should there be a charge to generators within SPP that cannot meet a minimum power generation reliability standard outside of its scheduled maintenance?

LANNY NICKELL: That's a good question. I'm going to get some water, starting to run dry here. Now, I will tell you, there are penalties if generators don't perform in accordance with our tariff. So I don't know if that's exactly what you were thinking of or thinking about when you asked that question. But we currently do have penalties for nonperformance.

HUGHES: So if they bid in the day before and can't deliver, then there are penalties.

LANNY NICKELL: Yes.

HUGHES: How is that? Do they have to just buy that power on the market from someone else at that higher price?

LANNY NICKELL: Well, they-- not only would they have to buy the power, but there's also a fee that's attached to their-- their statement as well for that nonperformance. And I don't really--

HUGHES: Are they significant or?

LANNY NICKELL: I, I really-- I'm going to have to say I don't know. I don't know exactly what that significance is, how much that penalty is. I just know that there is a, we call it an uninstructed deviation charge, which means they didn't perform the way they were supposed to and there is a charge.

HUGHES: I-- I just have a real problem with the reliability of generators. And if they can't be reliable, then they should go to the bottom of the list, in my opinion. So thank you for being here.

LANNY NICKELL: Thank you.

BOSTELMAN: Senator Groene.

GROENE: Thank you. I keep hearing 14 states, but how many members do you have?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: 104.

GROENE: 104. And what's the smallest? I mean, as far as output production?

LANNY NICKELL: Well, so some of those members-- there's a-- there's a variety of different members. Some of them are independent power producers. In other words, they don't serve load at all. They have no responsibility to serve load. They just-- they build generation, they produce power. And they offer, they offer their product into the market. We have members that serve load, much like NPPD, OPPD, and Lincoln. We have members that just simply want to build transmission. They're referred to as independent transmission companies. They-- they found a product and they want to sell that product. So in terms of members who serve load, you know, our-- our smallest member that serves load is probably somewhere around 800 to 1,000 megawatts.

GROENE: So 105 you said members?

LANNY NICKELL: 104.

GROENE: 104. Somebody said there was a lot more public power. You know, you got OPS [SIC], you've go- L, I mean, PP [SIC] and Nebraska, that's three public. Is there a lot of other city owned-- and--?

LANNY NICKELL: There are. In fact, the one that I was thinking about that was kind of the smallest is-- is a muni in Kansas City.

GROENE: They own their own power.

LANNY NICKELL: Yeah.

GROENE: It's not a co-op or anything.

LANNY NICKELL: And then we have-- we have other municipal systems that kind of pool their resources together and have a single agency that represents them. But it's an agency for municipal power.

GROENE: What happened in this event, was that a record? Was that a record member, the demand? How many kilowatts were demanded? You never hit it in a summer month or anything?

*Indicates written testimony submitted prior to the public hearing per
our COVID-19 response protocol

LANNY NICKELL: Oh, let me-- let me be clear. I started to say yes. It was a record wintertime demand for a switch, and it ended up being about 43,600 megawatts. To put that in perspective, our peak demand in the summer is about 50,000 megawatts.

GROENE: Generating 43,600 is normally not a problem. I said you-- it was a winter event.

LANNY NICKELL: It was.

GROENE: So the capacity was there.

LANNY NICKELL: Yeah.

GROENE: Something happens that you couldn't get to your capacity to produce because you do it in the summertime. Correct?

LANNY NICKELL: Yeah. I'll tell you, the biggest single driver for that capacity that was not available when we needed it was fuel supply. And let me give you just a little bit of information around that, because I've heard questions being asked. I've been chomping at the bit to answer them earlier. You know, we talked about gas and coal and wind. Those are our three biggest contributors of generation. We also have hydro and we have nuclear. But those are the top, kind of the top three producers.

GROENE: But coal is still number one. Right?

LANNY NICKELL: Right now, actually, as of last year, wind for the first year produced more energy than coal did.

GROENE: What about [INAUDIBLE]?

LANNY NICKELL: So coal dropped to number two last year just from an energy for the-- for the entire year.

GROENE: Well, because they have to buy the cheapest and you tell the coal plants to shut down. But as far as capacity, who's number one?

LANNY NICKELL: Natural gas. So-- so we have-- the term "accredited capacity" was used earlier. The way I describe that term, accredited capacity is the amount of nameplate capacity that you expect to show

up when you need it during peak times. It's the capacity you can count on, I think is probably the best way--

GROENE: Is that 112 percent based on that?

LANNY NICKELL: Yes.

GROENE: [INAUDIBLE].

LANNY NICKELL: And so for natural gas in our footprint, we have about 28,000 megawatts of accredited capacity. For coal, we have about 24,000 megawatts of accredited capacity. And for wind, it's about 3,500 megawatts.

GROENE: I talked to an individual I know well in Texas; he's a senator. He said the problem in Texas happened because of the green pressure. They had to credit coal-- wind at 24 percent in their mix and it was actually only about 12--

LANNY NICKELL: Yeah.

GROENE: --for political reasons. They-- are you going to be hearing anything about that?

LANNY NICKELL: Oh, yeah. Well, and so my point, you know, the 3,500 megawatts of wind is compared against about 14,000 that is considered in the accreditation process. So that means it's-- it's about 20 percent of what is owned by load serving entities that gets accredited. But here's the point I want to make. When we were experiencing these extreme conditions, the-- the-- the-- the most extreme part of the two days, the 15th and 16th, out of the 3,500 megawatts of wind that we are supposed to be able to count on, about 4,000 to 5,000 megawatts was being generated. So it actually overproduced.

GROENE: So everybody--

LANNY NICKELL: For natural gas, we-- we expect 28,000 megawatts to show up, only 12,000 showed up. And for coal, it's about 24,000, somewhere between 16,000 and 17,000 showed up. So I-- look, I'm not advocating for any particular resource mix. I believe if you can have diversity, you're much better off. I know when I invest in the stock market, I would never put all my eggs into one basket. And I think the

same thing is true here. We need-- we appreciate every resource we can get, whether it's coal or gas or wind, because that's what it takes to keep the lights on.

GROENE: So you heard two-- you were here all the time, two of our Lincoln and Omaha have advocated their boards have zero carbon. Now, you have a board made up of members and a lot of them are going this way. Does your board have the power to, with a vote of the board, to say the whole Southwest Power Pool by a certain-- 2050, we're going to be zero carbon--

LANNY NICKELL: Have absolutely--

GROENE: --and dictate that to Nebraska?

LANNY NICKELL: I have absolutely no authority over that.

GROENE: You don't have any authority to push their agenda.

LANNY NICKELL: Nope. Now, what we do when-- when those utilities make those kinds of decisions and they start to plan the generation in order to meet those goals, they do have to come to us and ask for an interconnection to the grid. And then we tell them here's what it's going to take, in terms of additional transmission infrastructure, to facilitate your interconnection. That's our role that we do not plan the types of generation and the amounts of generation and where it's located on the grid. We do require the 12 percent minimum excess capacity, but we have no planning responsibility in terms of where it's located and the nature of that generation.

GROENE: One last question. And can you tell us who the culprit was? Was it Iowa with all their wind? Did they produce their-- their 112 percent?

LANNY NICKELL: I don't know.

GROENE: Will that report cover [INAUDIBLE]?

LANNY NICKELL: We only cover-- we only cover a little bit of Iowa. So I can't really speak--

GROENE: [INAUDIBLE].

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: --on behalf of what else happened in Iowa.

GROENE: But we'll know that when you come up with your report, you're doing your review.

LANNY NICKELL: It'll be an exhaustive and comprehensive-- [INAUDIBLE]

GROENE: Who didn't, who didn't pull their part of the wagon up the hill?

LANNY NICKELL: I'm sorry.

GROENE: Who didn't pull their part of the wagon up the hill, and Nebraska had to bail them out?

LANNY NICKELL: We will-- we will figure that out.

GROENE: Thank you, sir.

BOSTELMAN: Senator Wayne.

WAYNE: So I just want to make sure I heard this right. Wind continued to produce across the 14 states above your-- your expectations?

LANNY NICKELL: Slightly above our expectations across the 14 states, yes, sir.

WAYNE: And coal was below. Do you know why? And natural gas was below. I think I know why on natural gas [INAUDIBLE].

LANNY NICKELL: Yeah. The natural gas is-- it's pretty clear. You know, again, I was told about 63 percent of our what we call conventional generation, which is coal and natural gas, was outaged due to fuel supply issues. I'm not -- I know of some just anecdotal evidence right now. We haven't had time to gather all of what we need to be able to be 100 percent accurate. But I am aware of some coal plants that had coal that-- that was not useable due to the the icing and cold weather. Now that-- again, I don't know how much of that was-- was in that same scenario, but I'm just aware of certain anecdotal pieces [INAUDIBLE].

WAYNE: So when you-- when somebody signs a contract to be a member in your organization, how long is that contract for?

LANNY NICKELL: Oh, gosh. By the way, we've-- I think we've shared that contract.

WAYNE: I got the membership agreement, but I don't know if that's [INAUDIBLE] same thing.

LANNY NICKELL: Yeah, that's-- that's it. It's the membership agreement. I think it's-- I think it's a two-year advance notice, something to that effect.

WAYNE: That's not what I-- I didn't ask about the advance notice. How long is the contract?

LANNY NICKELL: Oh. Well, they, I mean, they can terminate when they want, given that they-- you know, they have to give us an advance notice,

WAYNE: But it's unlimited. So when we signed up, we signed up for life unless we initiate the process.

LANNY NICKELL: Oh, yeah. Yeah. I mean, if-- we're going to assume you're going to remain a member until either you stop paying, you do something wrong, you violate a provision of the membership agreement and we have to do something on our own or the member otherwise decides to withdraw.

WAYNE: How many of the 104 members over the, let's say over the last ten years, how many have entered into the SPP or left the SPP?

LANNY NICKELL: Oh, gosh. Over the last ten years we've-- we've grown a lot over the last ten years. I don't know by how much. I can't-- I don't know how many new members have been added in ten years. I don't recall anybody withdrawing over that same period.

WAYNE: What does it cost to withdraw from the SPP?

LANNY NICKELL: It depends on the size of the, you know, the amount of load the member serves and their financial obligation, and that can change. And so I'd-- I'd have to give you, you know, you'd have to give me an example, you know, and I could give you a calculation. But I can't tell you off the top of my head what that is.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: I'd like to hear the numbers on Nebraska leaving the SPP as far as what it would cost each individual. I just want to know. That gives me a sense of the value of the contract to me, because you obviously put a number on it, there's a value to it. So is there a way to isolate areas of SPP turnoff switches to make sure it doesn't roll past Oklahoma?

LANNY NICKELL: You know, the system is designed to protect itself when conditions deteriorate. And so there are what we call relays that will trip certain elements in order to kind of isolate a problem from expanding. That is not an action you want to take on your own for reasons that are reliability related. And when I heard that question earlier, I-- I cringed a little bit, because I can guarantee you if-- if a utility or a state decided to isolate itself simply because it didn't need the rest of the system, NERC and FERC would both be investigating that situation.

WAYNE: Yeah, I understand that's recently. But again, the system has changed over the years. So I'm-- I'm trying to get my head wrapped around what-- what we committed to as a state without legislative authority. So let's talk a little bit more about who-- who determines what. So if the wind's blowing in Nebraska the same as in Kansas, how do you factor whether to shut down Nebraska's wind because we got too much power or Kansas's wind?

LANNY NICKELL: Well, we-- there would be two different types of decisions related to that. One is if there's congestion that you've heard described probably a number of times already today, if a transmission element was overloaded and we needed to take action, that action would consist of dispatching resources that were adding to the problem down and resources on the other side of the problem up. And so that would-- that would dictate where those resources would be dispatched. If, for example, the constraint was between Nebraska and Kansas, we would dispatch resources in Nebraska down and even further north and then resources on the south side up.

WAYNE: But ultimately--

LANNY NICKELL: That's-- that's one-- that's one method of-- that would dictate how the dispatch would occur. If it's a balancing situation, which is what we were in February 15 and 16, we have-- we have a procedure that has actually been approved by our members that directs

that load shedding. It's not really a dispatch situation there. That's more of a load shedding situation that, that is allocated on a pro-rata basis across all members based on last season's demand for the season. So for example, the winter season's demand would be used as the basis for doing a pro-rata allocation to the members this season.

WAYNE: So what I'm trying to figure out is if you-- you have ultimate say of whether we keep wind farms going or coal plants going in in Nebraska.

LANNY NICKELL: We-- we have the authority to dispatch them.

WAYNE: They can't say no, though. They can't keep their coal plant running at 100 percent if you say throttle it down.

LANNY NICKELL: Well, they could. I mean, there-- that's where we talked about some of the penalties for not performing. If we need them to move down and they don't, there would be a penalty associated with that.

WAYNE: Because what I'm really confused about when I look at these charts is you need more energy down south, but you tell OPPD to throttle down.

LANNY NICKELL: Yeah. Yeah, so let me talk a little bit about that, because that's been discussed a couple of times with the last couple of speakers. We did see some congestion that caused-- that the system, the way it's designed, tried to back down the generation in Nebraska and actually even further north. It wasn't just Nebraska generation that the system tried to back down in order to resolve the congestion. At the same time, we had some imports. I mean, we were-- we were importing almost 6,000 megawatts from our neighbors. And those imports began-- began to be curtailed because they were having their own issues. And when that happened, we-- at the same time we were trying to redispatch to solve the-- the transmission problem, we also needed to curtail load to solve the balance problem. And when we did that, within 15 or 20 minutes, when-- when we started curtailing load, within 15 or 20 minutes, the congestion actually went away. So that-- that contradictory action that has been discussed earlier, I want to clarify, it did happen, but only for about 15 or 20 minutes. Because once we did the load shedding, that congestion did disappear.

Dramatically reduced, it didn't completely disappear, but it was dramatically reduced.

WAYNE: But I didn't notice in any of the other graphs that anybody else in Nebraska with load was asked to throttle down. That's what I'm-- why OPPD?

LANNY NICKELL: Well, so I'm not sure exactly which generators, if that's what you're asking, which generators were reduced.

WAYNE: So when I go through all the charts and I'm looking at the charts, only OPPD was curtailed and I'm asking why was OPPD turned-- said to turn down

LANNY NICKELL: If that's the case, and I don't know for sure that that is the case, if that's the case, then it had to be because of the specific location of where the gen-- the congestion was, that it was more effective to move that generation down than generation perhaps on the west side of the state. If the constraint, the transmission problem is located just south of Omaha, then it would have been much more effective to reduce that generation than somewhere else in the state.

WAYNE: And that would make sense to me. But LES is buying power across the river just south of Omaha from Council Bluffs, and they weren't asked. So I'm-- I'm-- and-- and the reason why I'm asking is I can't believe with all the technology and all the software that's being used that we don't have answers today, that I can't tell my district in Omaha why they were told to throttle down.

LANNY NICKELL: Well, we certainly-- we certainly can get the information. I wasn't prepared to answer that specific question so I apologize. But our-- our system is very, very specific about locations and flows of energy from east to west impact different elements than flows from north to south. So it's possible that Lincoln was buying and it was creating flows, well, if they're buying from-- where were they buying from, Council Bluffs?

WAYNE: Council Bluffs.

LANNY NICKELL: OK, so that was more--

WAYNE: Yeah, it's the exact. That's--

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: But that could matter. I mean, even a northeast to southwest direction can affect different elements than a true north to south or the opposite.

WAYNE: So conjection-- congestion means we can't move energy across to south. Right?

LANNY NICKELL: A lot of the congestion that we were seeing appeared to be impacted by heavy north to south flows.

WAYNE: So at the exact same time we're saying to shed, we can't move energy south because of congestion. So isn't the net effect they could have just keep using the energy here because you can't move it south anyway?

LANNY NICKELL: You know, that is one of the things that we're going to have to look at. The tool that we had in the congest-- or the, the balancing, the load shedding plan that we had that was approved was not precise enough to implement a load shedding in the south part of the footprint versus the north part or in one specific area versus another specific area. Generally, when you're trying to make a decision as an operator to shed load, you don't have time to think about revising the written procedures that have already been approved and decided in advance. And so that was the situation we were in. We just did not have time to figure out whether it would have been better maybe to shed a little load in Lincoln as opposed to any load at all in OPPD or maybe a little load in Kansas City versus-- we just-- we went down the procedure in order to get the relief that we needed.

WAYNE: And I'm not trying to be combative. I'm just-- I'm just having a hard time understanding that when I'm sitting at NPPD's big board and I'm watching, and I watch wind just dramatically turn down because it's getting-- it's getting red over here. So I know you have the ability to make instant decisions of where it's at. What I'm trying to figure out is what happened here.

LANNY NICKELL: Yeah.

WAYNE: And you say you don't have that answer, but--

LANNY NICKELL: Well, so--

WAYNE: --it's what the hearing is about.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: --so the-- it's not necessarily instant. But our system every five minutes produces new dispatch instructions that take into account transmission problems. We don't have a system like that to take into account balance issues that tells us here's where you can shed load instantly [SNAPS FINGERS] and much more precisely than the method we had.

WAYNE: Well--

LANNY NICKELL: That's the difference.

WAYNE: Well, there was a letter that was sent almost-- a little over a week ago and this issue was brought up. And so it's one of these things where I ask it a hundred different ways and you keep saying you don't know, but at the end of the day, I'm not understanding why you don't know when this is exactly what we're talking about. This is what the entire hearing is about-- about blackouts. And one of the issues is we were told to shed, but we were also told to curtail in Omaha. I'm just-- I'm having a hard time understanding. I really am. And I don't know what else to say.

LANNY NICKELL: Well, it might be because I'm not understanding the question.

WAYNE: We'll try one more time. Sorry, committee. If we have congestion so we can't move energy down fast enough, so we're going to shed to balance, but we're also telling them to curtail at the same time and shed, I'm just-- I'm confused.

LANNY NICKELL: OK, so let me try to explain that. The-- the transmission congestion was resolved or at least was attempted to be resolved by our market system telling the generation to dispatch down. So that action was going on concurrently with our recognition that all of a sudden, due to curtailments of imports coming into our system disappearing, that we needed to fix the balance problem at the same time as it was two concurrent problems that demanded different solutions.

WAYNE: But wouldn't they just cancel each other out when I look at the numbers of what we were told to curtail?

LANNY NICKELL: Ultimately they did. But that's what caused the confusion. I mean, believe me, I got calls. Tom Kent called me

immediately. I got calls from Joe Lang [PHONETIC], what's going on? But within about 15 minutes, the-- the system, the dispatch system that produces a new solution every five minutes recognized that the load went away and that's what caused the congestion to disappear, which then caused us-- allowed us to dispatch back up the generation that had been previously dispatched down. So there was some movement going on. That-- that movement which caused the confusion because of the concurrent problems with two different solutions, was ultimately corrected. We did dispatch the generation back up.

WAYNE: But unfortunately, in Omaha, we've had meatpacking plants that went off line, which cost us hundreds of thousands of dollars, if not more. What do we say to those people?

LANNY NICKELL: Well, I'm going to say we're going to learn from this and get better. And it's all I can do at this point.

WAYNE: I know. But if I don't pay my bill or the energy price goes up, I got to pay it. I mean, are we going to credit something back for your-- for the mistake of the SPP?

LANNY NICKELL: We will-- we will do what we can to make generators whole if they operated the way they were asked to operate. We have a tariff provision that allows us to do that and we'll do it.

WAYNE: Thank you.

BOSTELMAN: Senator Moser.

MOSER: So since only part of Texas is part of the SPP, is it fair to say that Texas was a major part of our problem?

LANNY NICKELL: No. And the reason why is because we have very limited interconnection with the part of Texas that's not in SPP. We're actually separated from that part of Texas through direct-current tie lines, and we can only deliver or receive no more than 800 megawatts of energy. So--

MOSER: To the Texas system from you.

LANNY NICKELL: Yeah, even if we wanted to give them power to help them out, 800 was the maximum because of those DC tie limitations. That's the maximum we could have sent them. Now, we-- we couldn't do that

anyway because we were experiencing our own problems. But it's those, you know, the fact that they're so isolated from the rest of the connection, the eastern interconnection, which thank God we're not. I mean, we had a lot of interconnections that allowed us to actually receive 6,000 megawatts from our neighbors. The maximum they could receive from us is 800. That's a big difference.

MOSER: Does the Texas part of the SPP provide enough power to the SPP in normal times, or are they always a net user?

LANNY NICKELL: The part of Texas that's in SPP? You know, I'm not aware of any situation where they are generally leaning-- that's, that's the term that sometimes gets used-- on the rest of the system.

MOSER: Like the part of the family that's always borrowing money from the rest of us, yeah.

LANNY NICKELL: Yeah. I'm not aware that that's the situation in that part of Texas.

MOSER: So where was the problem?

LANNY NICKELL: Well, I don't know for sure where it was at. All I can tell you is based on what I know from anecdotal experience and it's a lot of that gas generation that just didn't run. I think the review will tell us exactly where it's located [INAUDIBLE].

MOSER: Some of that could have been in Oklahoma also?

LANNY NICKELL: It could have been in Oklahoma. It could have been in Kansas. I don't have the exact numbers, but we will certainly figure that out.

MOSER: Well, I appreciate you coming to talk to us. I'm sure you had to figure that we were going to ask questions that were a bit accusatory. And I think you've been really good at trying to answer them without returning our--

LANNY NICKELL: I appreciate it.

MOSER: --angst that we're feeling from our citizens because our citizens don't understand. You know, they turn the switch, they want the lights to come on. If they want to dry their hair, they want their

hair dryer to come on. They don't-- they don't understand it. So I really appreciate you coming to talk to us and trying to explain it.

LANNY NICKELL: Thank you.

BOSTELMAN: Senator Cavanaugh.

J. CAVANAUGH: Thank you, Chairman Bostelman. Thank you, Mr. Nickell, for being here and answering all these questions. Echo Senator Moser's comments. And I've got a couple of, I guess, unrelated things tying together. One, there's been a lot of conversation about separating ourselves because it feels like we did what we were supposed to do. All of these folks who came here today and subjected themselves to our kind of questioning, they did a good job. And then we still our-- our citizens, as Senator Moser just pointed out, felt the pain. So there's a lot of talk about separating. But what I think I just heard you say, is that ERCOT, right, the Texas, they're separated from everybody else. And as a result of that separation is one of the reasons that exacerbated the situation in Texas. Right? They didn't have kind of that community to fall back on to the degree that our community does.

LANNY NICKELL: I'll just say I'm very thankful that we have the rest of the eastern interconnection to help us out when we have a need and, of course, when they have a need, we help them out, too.

J. CAVANAUGH: But also the rest of SPP had us.

LANNY NICKELL: You're right.

J. CAVANAUGH: In this situation, we kind of we're the ones that were helping out.

LANNY NICKELL: You're right.

J. CAVANAUGH: And that's kind of the problem that I think a lot of us see here is and what Senator Wayne was getting at is we overproduced and still had to have members of our community go without. So that-- I think that's the basic, you know, question, the problem we have here. And that's what I think everybody would like to find out is how do we avoid that in the future. And so one of my questions is, did everybody in the entire SPP have the same situation where they were-- had to curtail in some part-- I'm sorry, had to, what's the word, cut people off? What's the word for that?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: Yeah, every-- every utility in our region did have to curtail or shed some load.

J. CAVANAUGH: So that's all the way up in Montana too?

LANNY NICKELL: Yep.

J. CAVANAUGH: Even though it kind of looks like based off of what you're saying the congestion was, the congestion was too much production north running south, was that-- are there going to be other people who are having the same questions we did up in North Dakota, South Dakota, Montana?

LANNY NICKELL: It's-- it's possible. Again, I don't-- you know, we don't generally look at things on a state-by-state basis because, you know, we're just concerned about making sure every single customer across our 14 states can be served. So you know, you guys looking at it the way you did kind of opened my eyes. But you know, maybe it's because you're the first to really look at it. There could be other states in the same situation. And I know that changes day to day. I mean, I've seen times where Kansas is producing so much wind. They don't need it. They've got 200 percent more energy in Kansas that's been delivered to other states. It's because when the wind blows, you don't tell it to stop blowing. You just-- you accept that free energy and you're thankful for it. All right? And so in those conditions, when Kansas is overgenerating, we don't tell them, you know what, back down, because we-- you know, that's not fair to you. We let that flow wherever it needs to flow. And I've seen times in North Dakota when coal is producing and they don't need that much energy. But North Dakota's happily sending it to the rest of the footprint. And we're very appreciative of that.

J. CAVANAUGH: In terms of-- basically, it sounds like if you-- if these folks didn't comply with the order to shed load or curtail, they could be fined-- it was, it was a million dollars a day or something like that. Are you aware of any of the entities within the SPP that are going to be subjected to that stiff a fine?

LANNY NICKELL: There is a NERC and FERC investigation that's already begun. I know we've already received data requests. I don't know to what extent any of our members have also received data requests. But-- so right now it's just too premature to answer that question. I

don't-- they haven't finished their investigation yet, so we won't know. And in fact, even-- even if NERC identifies a violation of one of our members, they don't make that public. So we wouldn't really have any way of knowing that unless our member told us, you know what, we committed a violation. We were penalized. We have no way of knowing that because it's-- those investigations are done and kept confidential. Now, when SPP has a violation, we-- we-- we make sure our members are aware of that because they have to help pay for that. And we don't want to commit a violation because our members-- and we're nonprofit. So if we commit a violation and we get penalized a million dollars, guess who has to pay for that? It's our members.

J. CAVANAUGH: Thank you.

BOSTELMAN: All right. Senator Gragert.

GRAGERT: Thank you. Thank you for your testimony and the time you're taking here to explain this all to us. And I was going to ask this question. I'm still going to ask it. Was the shed divided out equally in the states? But it gets much more complicated. As I sit here and listen to this, I think I'll just withdraw that question.

LANNY NICKELL: I appreciate you letting me know which question you're withdrawing.

GRAGERT: And go on to my next one. Could you explain the SPP's planning reserve margin and how you calculate it?

LANNY NICKELL: How long do you have?

GRAGERT: Short term.

LANNY NICKELL: So our planning reserve margin is-- it's 12 percent. That's the minimum. I heard Tom Kent say that they carry about 15 percent excess capacity above their-- their load. So they're meeting the threshold. They're-- they're compliant with-- with our minimum requirements. I can tell you SPP as a region is about 20 percent long in terms of excess capacity. So some members may be a little closer to the 12 percent; some members a little bit more, you know, closer to the 20 percent that the region on average carries. The way that's calculated, it's a probabilistic analysis. We run thousands, tens of thousands of different scenarios in our-- our models and our tool that analyzes that. And what we're trying to do is, based on probabilistic

analysis, identify the amount of excess capacity that's needed in order to prevent no more than one day in ten years of loss of load. That's the criteria. And that's pretty standard. The whole industry uses pretty much that same-- one in ten is what they refer to it as-- one in ten standard. I mentioned this is the first time in 80 years that we've had to do this. So you know, we're going to have a lot of debate. You know, do we need to increase the planning reserve margin? Is 12 percent adequate? Do we need to go up to, you know, 15 percent? And we're going to have a lot of debate about that, but it's based on probabilistic analysis. And really what matters-- I think where the real debate needs to be is around the accreditation. Because when you, when you have certain fuel types that are expected to generate and don't, we may need to rethink how we're accrediting that capacity.

GRAGERT: So in the last five years, has that went up, that reserve or that, yeah, that reserve, that reserve margin, has it?

LANNY NICKELL: No, actually it's, it-- 12 percent is the current reserve margin requirement. And again, this is-- this is for planning purposes. This is what our owners, the utilities, use as the basis for planning to build new generation or buy new generation. You don't have to necessarily own it but you can buy it. And as long as you've got a firm contract that counts, and that's been around since I believe 2016. Before that, it was actually a little higher. It was about 13.6 percent was the reserve margin requirement.

GRAGERT: One last question for you tonight from me is that, you know, there's-- you're looking at investigating it, there's some things we've got to change. What is the one thing you can sit here tonight and say it definitely has to be changed?

LANNY NICKELL: Oh, gosh, I can only pick one thing?

GRAGERT: OK, three.

LANNY NICKELL: The top three, all right. Well, I think the communications aspect of this is something that we need to get better at. You know, when you don't do something very often, the communication, you [INAUDIBLE] understand how to do it technically. Our operators are trained. Every year they go through exercises to get trained. They spend one out of every six weeks getting trained, not necessarily on these kinds of events, but they-- they are very

deliberate about getting trained. What tends to not be practiced as much is how you communicate and what's the effect of that? I mean, should we have issued a public appeal more than 24 hours in advance? Would it have been effective? I think that question was also asked earlier. How effective was it? And we don't know until we actually experience it. You know, you don't know what the effect the public appeals are going to be until you ask. And so-- but-- but those are the kinds of-- I think the communications aspect. One of the things that we heard many times is I wished I'd have had more advance notice. And you know, as staff, SPP staff, we're thinking that we-- we gave-- we called-- we called for public appeals 24 hour. And we-- we did all of, you know, and we just go down the list of all the things that we did to kind of help communicate. But clearly, we didn't communicate to everybody that needed to be communicated to. So I think that's-- that's probably the first thing. It's probably actually the cheapest thing we can do. I mean, you know, if we increase the reserve margin requirements that requires more generation to be built, somebody's got to pay for that. And so you have to do a cost-benefit analysis. But the quickest and cheapest thing we can do is improve the communication. So I probably put that number one. I think we've got to-- we've got to look at the reserve capacity and are we counting the right stuff in the right way? I mean, I mentioned the 28,000 megawatts of gas that we expect to be there when we need it. And during summertime, it is. When people aren't using natural gas to heat their homes, gas is readily available. It's available in the summertime when we actually experience our peak. It wasn't available in the winter. And that's because of the fact that we're all trying to use the same gas, the gas that generation needs to keep lights on in your house is the gas that we also like to use to heat our homes. But we got to look at that. I mean, we just can't ignore it. Are we accounting correctly for the capacity that gas generation can provide? That's-- that's got to be a key part of our analysis. That would be my top two. Let me just stop there.

GRAGERT: I appreciate that, because it doesn't surprise me at all that communication is your number one for two reasons. The 30 years on the volunteer fire department and all the drills we did when we actually went out and did something, communication was the number one problem.

LANNY NICKELL: Yeah, transparency.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GRAGERT: Forty years in the military and all the rock drills we did when we went to war, communication ended up being the number one problem. So what we're good at as Americans is working in chaos. And I think that's what you guys just experienced with this last drill you had to go through. So thank you.

LANNY NICKELL: I couldn't agree more.

BOSTELMAN: So I'll ask just a few questions here. So is-- is the SPP currently or has it been under investigation by FERC?

LANNY NICKELL: Yes.

BOSTELMAN: And if so, what were the allegations, maybe more recent than others?

LANNY NICKELL: Well, I'm not at liberty to say. Nothing to do with an event like we had here, but we have been investigated. They investigate or have the ability to investigate, not only just for reliability standard violations, but also for violations of our tariff. We have a-- we have a tariff that specifies the rates, terms, and conditions that we have to abide by, as well as our-- our participants that operate under that tariff. And-- and so FERC has the ability to audit and make sure that-- that you're performing in accordance with those FERC-approved rates, terms, and conditions.

BOSTELMAN: So can you say is there, and just ask again, is there a current investigation of what's-- what just happened by FERC?

LANNY NICKELL: It has just begun. And they're-- all they're-- right now they're just asking questions. It's a data request, and we don't know what the outcome of that is going to be.

BOSTELMAN: OK. What are the current limitations, vulnerabilities with an SPP? For example, identify if there are interconnections issues with RTOs or between utilities within SPP.

LANNY NICKELL: I'm sorry, can you ask that question again?

BOSTELMAN: Sure. What are the current limitations, vulnerabilities within SPP? For example, can you identify if there are interconnection issues to other RTOs or between utilities within SPP?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: Let me begin by saying that, over the last decade, SPP has directed construction of about $8 billion of transmission infrastructure. I believe that really came to use, real good use two weeks ago. And-- but even despite that, I mean, and $8 billion, that's a lot of-- it's a lot of money to invest in the transmission system. But despite that, we still saw congestion. We normally have about 3,000 megawatts of interchange capacity between us and our biggest neighbor to the east, which is MISO. We were-- we were importing 4,000 to 5,000 megawatts and a little bit more than that at times from them. So we were using the system. We were-- we were running it hard because we were doing everything we could to keep from having to shed load.

BOSTELMAN: And can you identify any specific limitations in Nebraska that SPP or the public utilities have brought to light, i.e., for instance, a reactive power issue, sagging in voltage along 161, 230, or 345 kV lines?

LANNY NICKELL: You know, we have-- we have seen, through our transmission planning studies, issues in the past. I believe we have identified solutions to those. So you know, without-- without looking at the most current transmission planning study, I can't tell you whether there are any more issues that need to be resolved. But I do know we've seen issues in the past. The R-plan is one of those that was identified as being helpful in-- in resolving reliability issues in a certain part of the state. And there's others. I mean, we've-- we've, you know, I don't have the exact number in front of me now, but I know we have issued instructions to build more infrastructure, even in Nebraska, to solve some of those issues.

BOSTELMAN: OK. So what are the limiting relays and protective systems within SPP and specifically what locations, if you can say where they're at and what is being done to upgrade such? In other words, are member utilities responsible and is there a timeline? Are the relays and protective systems only the responsibility of the member utilities or controlled by SPP?

LANNY NICKELL: That is a responsibility of the member utilities to make sure that they --they have the right protective devices and that those are set properly.

BOSTELMAN: Senator Groene.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: OPPD, could, could I-- would a good analogy be when you asked them to shut down transmission was it because like a kink in a garden hose, production, but you had somewhere in your transmission system that overloaded, couldn't handle it? And that is something you'll look at to make sure that kink-- and it could have been in their own transmission out of their plants. Right? But there was a hot spot.

LANNY NICKELL: Could have been. If that, you know-- you know, when you asked the question, Senator Gragert, about, you know, the top three things that we need to look at, I think transmission infrastructure needs is probably going to move to this item number three, because because we saw-- we saw needs on the system during this event. Now again, the question is, is what is the cost appetite to fix those needs for an event that doesn't occur very frequently?

GROENE: Restrictions in the system [INAUDIBLE] Also, the cost. You said you bought 4,000 megawatts. Somebody's got to pay for that. Somebody's got to pay for the fact that we went from $26 million budget NPPD for natural gas and put another $80 million in there. There's a huge amount of money been spent, over budget, by your members. The consumer is going to pay for that. There's going to be rate increases across SPPD [SIC], is there not? There has to be. Somebody's got to pay for it.

LANNY NICKELL: Well, again, all I can tell you is, based on what I see, there were really expensive power purchases occurring. But I can't tell you how that's going to roll back.

GROENE: Is that individual members going to do that or is it shared across-- blended cost across SPPD?

LANNY NICKELL: Well, the-- the way those purchases are settled is through our market so it really depends on whether or not a member was hedged. I think you've used that term before. Did they-- did they have enough of their own generation? Were they buying? Were they purchasing? And that, that depends on a member-by-member basis.

GROENE: Somebody's got to pay for it.

LANNY NICKELL: If somebody was buying at some of the expensive cost of power we were seeing, we were seeing cost as high as $4,400.

GROENE: So the consumer eventually will pay for it.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: Somebody's going to have to pay for that, yeah.

GROENE: I'll quit after this, but 112 percent of what is your capacity of your highest--

LANNY NICKELL: Of the peak--

GROENE: --output is what you said was 50-some million in the summer?

LANNY NICKELL: Yeah, I should have clarified that. Each load serving entity so, for example, NPPD, they evaluate when their peak demand occurs and, whatever that peak demand is, that they have to make sure they have enough capacity to serve that load plus--

GROENE: All year long.

LANNY NICKELL: --plus another 12 percent.

GROENE: So you said, I think, that this wasn't one of our major problems. I mean, we've done 53, 55 million megawatts in the system in the summertime. And this was 43.

LANNY NICKELL: Forty-three point six is what we saw at its-- at its highest. So and we have about 50-- 50,000 megawatts in the summer.

GROENE: So it's 50 megawatts in the summer?

LANNY NICKELL: Yeah.

GROENE: One hundred twelve percent is about 60 million. And we only needed 43 million this last-- this is not just the 1 or 2 percent missing. This is down to 73 percent or 70 percent or so we were only able to produce of the 112 percent that we were supposed to. So this isn't just a minor mistake here.

LANNY NICKELL: Oh, I know. I know.

GROENE: I mean, so if we were exporting and we were producing our 112 or 115 percent, there were members out there doing 30 and 40 percent.

LANNY NICKELL: And that's what our investigation and analysis is hopefully going to uncover.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

GROENE: So you're going to set up a system where you verify when they tell you they've got 112 percent that they have 112 percent--

LANNY NICKELL: You know, we--

GROENE: --to be a member?

LANNY NICKELL: --we did a verification process. Unfortunately, it-- it-- it doesn't look at these kinds of extreme events when we verify whether or not they have enough capacity.

GROENE: [INAUDIBLE] extreme. You can do 50 mega-- 50 million in the summertime.

LANNY NICKELL: Yep.

GROENE: We're only talking about 43.

LANNY NICKELL: And I think that's again, one of the things we've got to look at. I mean, we-- we rely so much on summertime assumptions because that's generally when you need the most capacity. We just-- we're just not accustomed to seeing this kind of need in the wintertime.

GROENE: Thank you. I'm not blaming you, I'm blaming [INAUDIBLE].

BOSTELMAN: Senator Moser.

MOSER: I just had a question, kind of a clarifying question. Typically, your generators in your system, the power companies that generate power bidded into the system and they'll say, I can provide so many megawatts of power at 2, 3 cents or whatever it is. And then you decide as a group which of the power generators you pick based on how they bid into the system?

LANNY NICKELL: Right. That's correct.

MOSER: So if somebody, like if Kansas is generating a whole bunch of wind power, they could bid that in really cheaply and then you might buy that rather than go to a coal plant and buy electricity from them. Is there a fudge factor? Maybe that's not a good term, but a special allowance for green energy versus other energy? I mean, would you be

more inclined to buy power from a wind farm in Kansas than a coal plant in Nebraska?

LANNY NICKELL: There's really only-- there's only two considerations when we choose the generation needed to serve the demand. One is, is the cost. And then second is whether or not it can be reliably delivered.

MOSER: OK.

LANNY NICKELL: And so we don't-- we don't consider any other aspects or characteristics of the generation other than just simply cost to start and cost to run and then whether or not we can deliver it.

MOSER: OK, and so then when power prices just went crazy-- --nd Senator Groene was talking about who's going to pay for this, but if a power generator was bidding it into the system, they could put it in higher. So they may not actually have higher costs. I mean, they could say, hey, we'll provide how many megawatts at 6 cents or 10 cents or something, if that's what the market price is.

LANNY NICKELL: Yeah. Now I will tell you, we have what we refer to as a market monitor that watches those kinds of things. And if-- if they believe there's some manipulation going on, they have every right and actually responsibility under the tariff to evaluate that and-- and report it to FERC.

MOSER: I don't think they would be doing it to gouge, but I think the market adjusts the availability of electricity and the price--

LANNY NICKELL: Yep.

MOSER: --so that they match. And that's why the prices were really high--

LANNY NICKELL: Oh, yeah.

MOSER: --is because people couldn't generate and they needed electricity.

LANNY NICKELL: Yeah, and that's no fault of the generator. If the generator's having to pay 200 times the normal price for gas, that

generator has every right to expect to be compensated based on his cost.

MOSER: Yeah, that's a better way of saying what I was trying to say.

LANNY NICKELL: Yeah.

MOSER: I'll give you that. But then people would bid into the system and then you still told some of them to power down. So was that you didn't buy electricity from them on the market or you just went in and said, OPPD, don't generate, you know, we don't need your power? I mean, how does that work?

LANNY NICKELL: Yeah, that's basically we send a signal to them that tells them to move down and we don't buy their power from them while they're-- by whatever amount they've reduced their power, that just simply means that they're not getting paid by that amount.

MOSER: OK. All right. Thank you. Appreciate your patience.

LANNY NICKELL: You bet. No, no problem.

BOSTELMAN: Senator Wayne.

WAYNE: I really have just one question. How much lead time could you reasonably provide OPS, OPS-- OPPD, LES, and NPPD before the power gets turned off?

LANNY NICKELL: So on the first event on Monday the 15th, we were in an energy emergency alert level three for about two hours before we curtailed load, before we issued the load shedding instruction. And the reason for that is because an EEA 3 is indicative of the fact that you no longer are able to maintain your reserves. It doesn't necessarily mean you're load shedding at that point. It just means you're-- you could be very soon and you no longer have your reserves. So when we called it on the 15th, that very first issuance of the EEA 3, that was a notice that load shedding is imminent. And we didn't actually issue the load shedding instructions for about two hours after we first issued the alert. Now, unfortunately, on the next day, Tuesday, because of the fact that conditions were changing so rapidly, we called an EEA 3 and then about 30 minutes later, we did the load shedding.

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

WAYNE: And then there was one more shredding after that?

LANNY NICKELL: No. Well, yeah, there was. It-- it was-- it was actually two tranches. I think we asked for about 1,700 megawatts the first tranche and then another 1,700 the second, because conditions just continue-- the supply continued to drop; and that event lasted a little over three hours.

BOSTELMAN: So we're talking about setting the rate and kind of a little bit how that works. When, because one thing we've heard is we don't necessarily know what the cost is going to be as it comes down. When do you anticipate for our produce, our generators, our public power districts to understand what the cost is going to be and how that may or may not affect the rest of us?

LANNY NICKELL: We issued our first invoice that covered the operating days-- it's about a week. It's a weekly invoice. And that first invoice that covered any of these particular dates went through February 17. That invoice was sent last Wednesday. Payments are due today. I have-- I have not gotten any update on whether or not those payments were made. But-- and then for the remaining part of that week, invoices, I think, were sent today and payments are due a week from now. It's not that simple, though, because we expect there to be disputes about some of those invoices. And when that happens, it takes-- it could take a month or two months to finalize those. And as long as those disputes are still open, it just simply means that there's still some exposure, either for additional payments or you could get some money back. So it's not-- it's not going to be final for probably a couple of months. And-- and actually even that's kind of optimistic because of the high cost of energy that we're being-- that we were seeing in the market. I mean, some of these settlements could go all the way to FERC. I can't really tell you when this is all going to finally be settled and we can get back to normal.

BOSTELMAN: So could you let us know what the cost is for membership either today or if you could send that to us later? And does it-- does it depend upon the generator, you know, NPPD, OPPD, LES may have a different membership fee? I don't know. Or does all [INAUDIBLE]--

LANNY NICKELL: Are you asking about the exit fee?

BOSTELMAN: Pardon?

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: Was it the exit fee you're interested in?

BOSTELMAN: The membership to be a part of SPP.

LANNY NICKELL: Oh, just, OK, to be a part of this.

BOSTELMAN: Just be a part of SPP, that's all.

LANNY NICKELL: Because I know you're asking about the exit fee, so.

MOSER: Right. Right.

BOSTELMAN: I want to talk about ERCOT for just a little bit. One thing we have to understand with ERCOT is its grid sits-- it's in an N formation. It's-- their grid sits in an N which is different from here. Since we're a public power state, our grid sets completely different where we-- transmission is handled differently in our state, which is a benefit to us. My understanding that there's-- I don't know if it's a-- if it's an interconnect, whatever, there is a connection in Oklahoma potentially to ERCOT [INAUDIBLE] to the SPP.

LANNY NICKELL: Um-hum.

BOSTELMAN: I also understand that at a certain time that that was-- that was open, the breaker was open so we didn't flow or did we produce or did we provide power to them?

LANNY NICKELL: We-- we were providing some power to them, but I don't believe it was across that particular interconnection. We have another one in Texas that's good for about 600 megawatts. And I believe that until we needed the power for ourselves, I think up to 600 megawatts was flowing into ERCOT. Now, when we began to see our own conditions deteriorate, we did have to interrupt about half of that. And there's a couple of other situations where power could be provided to ERCOT. We have a couple of units in Texas. They're referred to as grid switchers. It just simply means that if we need them in SPP, they can disconnect a breaker and move from ERCOT into SPP and vice versa. A couple of those units, I believe, were switched into ERCOT the whole time.

BOSTELMAN: And that didn't really-- what I'm hearing you say, that was maybe early on. So it did not create a problem for SPP. When it got to a point where there was an issue, then that's one--

*Indicates written testimony submitted prior to the public hearing per our COVID-19 response protocol

LANNY NICKELL: That's right.

BOSTELMAN: --that was backed off.

LANNY NICKELL: That's right, yep.

BOSTELMAN: OK. I think that's all I got. Any other questions?

MOSER: Let's quick adjourn.

BOSTELMAN: Well, Mr. Nickell, we really appreciate you coming up today. I want to thank everybody, all the CEOs, general managers, for coming in. We really appreciate the opportunity to speak. This is something that is critical to the state of Nebraska. And we really appreciate your time for coming in to our Natural Resources Commission-- Committee. Thank you. That will end our hearing on LR48.