FEDERAL ENERGY REGULATORY COMMISSION

TECHNICAL CONFERENCE ON MODELING LOAD ZONE K AS AN EXPORT-CONSTRAINED ZONE FOR FUTURE DEMAND CURVE RESET PROCEEDINGS

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REPORTER'S TRANSCRIPT OF PROCEEDINGS

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P R O C E E D I N G S

CHAIRMAN HENSLEY: I think we'll go ahead and get started, still waiting on Rich Miller and Dr. Sasson from ConEd to get here, but they are going to be here in about 15 minutes. Just a few housekeeping matters. We are not going to be taking questions from the phone, I hope everyone on the phone can hear me, until the second portion of the conference, after the break titled "Technical Discussion," and during the technical discussion we are going to start with questions from Commission Staff and get those answered and then open it up to anyone who has questions.

It's on the schedule from 12:30 to 1:00, but if we are moving quickly I think we'll probably get there before 12:30. Next I was going to introduce the people at the table. From NYISO we have Emilie Nelson, Rana Mukerji and Henry Chao. Then we have Pallas LeeVanSchaick from Potomac Economics; from Central Hudson we have John Borchert and Ting Chan.

From Long Island Power Authority we have David Clarke and David Yaffe. And we also have Michael Mager from Multiple Intervenors.

And from FERC Staff, I'm Jesse Hensley from the Office of Energy Markets Regulations, Adria Woods, also from the Office of Energy Market Regulations, David Mead

from the Office of Energy Policy and Innovation, Randy Johanning from the Office of Electric Reliability, and a couple other folks sitting along the wall there.

Just to frame the discussion, a few comments about the purpose of the tech conference. As you all know, on August 13, 2013, in Docket No. ER13-1380, the Commission accepted NYISO's proposal to create a new capacity zone comprised of Load Zones G through J; however, some parties argued that Zone K, Long Island, should be added to the new capacity zone, either without condition or as an export-restrained zone. The Commission's August order declined to do so, but directed Staff to hold this tech conference to explore the concept of modeling Zone K as an export-constrained load zone in the next demand curve reset proceeding.

Modeling Zone K as an export-constrained zone would allow at least part of the local capacity requirement in the new capacity zone to be met with resources located in Zone K as an alternative to resources located in Zones G-J. This approach may be desirable only if at least some capacity additions in Zone K can provide a reliability benefit to Zones G-J.

Staff intends for the discussion today to shed light on the extent of its reliability benefit and, if the benefit is sufficient to justify nesting Zone K within the

new capacity zone.

Okay, with that I think I will turn it over to NYISO for their presentation.

MR. STALTER: Just a few opening remarks if we could. Good morning everyone, I'm Ray Stalter, Director of Regulatory Affairs for the NYISO. We just really wanted to take a moment to thank the Commission and Commission staff for organizing today's conference, and wanted to also thank the panelists and attendees for joining us today as well.

Just briefly introduce the team that is going to be speaking today and go through the presentation, speaking first will be Henry Chao. Henry is the VP for System and Resource Planning for the NYISO. He is going to walk through the boundary determinations process.

Next will be Emilie Nelson, who is the VP of Market Operations, and she will walk through the capacity auctions administration process. And finally, Rana Mukerji who is our Senior VP for Market Structures, and he is going to walk us through the design considerations and market implementation.

So with that, I'll turn it to Henry. If folks need copies of the presentation that we are walking through, there's copies here and I have copies here as well.

DR. CHAO: Again, my name is Henry Chao, and I'm

going to kick off the conversation today on the NYISO side. So basically I'm going to focus on the technical study that is behind the setting of the boundaries of the new capacity zone.

So my presentation again is basically organized in three groups. One is a few slides to give you the background, basically tells you that the criteria we used and what New York's power system looks like, and then the specific studies we performed to determine the boundaries, and then in the last couple slides we are going to show you once the boundaries are defined how the locational capacity was reserved requirements, the new capacity zone is determined. So I'll pause before I switch from one topic to another.

So by way of introduction, I'm on slide number 4, so the background of New York. The New York system has been designed according to the NPCC and the NERC as well as the New York State Reliability Council reliability criteria. So specifically for the resource adequacy it has to meet the one day in ten-year loss of load expectation criteria. In other words, the system has to be designed to be subject to the risk of loss of load of not more than, or less than one day in ten years.

So that has been the criteria for us, and the orders of New York's system over the last 20, 30 years,

probably even longer than that.

So in order to meet the risk of adequacy criteria we needed two things. We needed generation resources as well as demand response in the various locations, and then you need the transmission that can securely deliver those capacities from generation of capacity resources to the load. So you needed two things, sufficient capacity resources, and then secure transmission system that brings the load to the generation.

Again, as the background, so the New York system as of today, at least for the year 2013-2014, the New York system has studied and has requirements set such that all the load-serving entities are required to purchase 117 percent of its load for the whole state, we'll call it the New York control area, and then because of transmission limitations, specifically in the load center in New York City and Long Island. So we have a specific locational requirement.

So in addition to the 117 percent that's the locational LSE's need to purchase, you also are required to purchase 85 percent, I guess 86 percent for 2013/2014 for New York City from those capacities located in Zone J, New York City, and 105 percent from Long Island, Zone K locally.

So again, for example for the load serving

entity in Zone J it has two requirements; one, to meet locational purchases from local resources, 86 percent, and secondly; the ultimate purchase of the rest, because the rest is 117 percent. So there are two criteria --

MR. MEAD: Could I just ask one detailed question? With regard to the Long Island 105 percent criteria, can any of that be met with resources imported through the crosstown cable or any other underground wire?

DR. CHAO: Only through those controllable circuits such as crosstown cable.

MR. MEAD: Okay. So resources across the crosstown cable would count towards the 105 percent?

DR. CHAO: Let me be specific. In Long Island there are two cables connecting to New England, and one circuit connecting to, controllable circuit to PJM, and also two 138 kV circuits connecting to Zone J. The capacity that is from New England and PJM can sell to Long Island of its capacity if it is local, through the HUD crosstown cable, and then that's through the HUD circuit.

CHAIRMAN HENSLEY: Just housekeeping, if you are going to ask a question, please identify yourself and where you're from.

MR. MEAD: I'm David Mead, FERC.

DR. CHAO: Okay. So slide 5. Further as a background, I mentioned reliability standard criteria, so

this is kind of just for your information, so when we study the system, reliability study, we typically have two criteria to meet, one is from the resource adequacy, we call it adequacy criteria, and then another one is security, typically the transmission system security.

The adequacy basically is to make sure that we can deliver aggregate of the resources to the aggregated load through a secure transmission system. And the security basically requires us to satisfy the various NERC, NPCC, as well as NYSRC's transmission standard to make sure that the system can deliver the transmission requirement under certain required contingency, basically we call it N-1, sometimes we call it N-1-1. I'll go into detail later on to describe the details of the steps.

So we have these two criteria, once again, adequacy and transmission security, and I hope that those are the typical standards that not only for us but also other entities in the country also use those reliability criteria.

Again, people could also view this one as adequacy, ultimately people can satisfy using the various tools that analyze this. What we do in New York is we use the probabilistic simulation software called MARS, it's by the General Electric, the study system based on the probability of loss of load expectation, LOLE, and again,

on the transmission security with analyzing the system per NERC, NPCC transmission standards.

Next slide, slide 6. So slide 6 is, the bubble on the right hand side of the slide gives you an overview of what New York's system is. Actually, it's kind of depicted as what the New York looks like, starting from Zone A, which is the Buffalo area, west of New York, all the way to central part of New York, that's Zone C, and then capital area, Albany, where I came from, where the New York ISO is, that's Zone F, then New York City is Zone J, and Long Island is Zone K.

So you can see that the system, we have actually depicted this system basically is to represent the system by 11 load zones, and then connecting those load zones with transmission, and those transmissions were studied with transfer capabilities in both directions. So the purpose of that, the multiple system, is that we can study the system such as it takes factoring the transmission limitation as well as resource limitation per zone and as a whole per system, we call New York Control Area, NYCA.

A moment ago I mentioned the number 117 percent for statewide, that's the NYCA. For specific load Zones J and K, those are the locational requirements. The whole reason is because the limitation from the transmission that could deliver, if this would reach zones such as Zone A,

Zone C and Zone B, were bottled.

Also on the chart you see something called UPNY, that's for upstate New York, to Southeast New York, SENY, that interface has been lately showing, the last four or five years, probably even longer, that the most funding-limited transmission constraints. So as I said, the resource rich Zones are A, C and D, those are on the north side of that UPNY/SENY interface.

So obvious question here is that when you have the Zones GHIJ and K on the constraint side, we need to find new capacity on that obviously would be a candidate. So when we decide what to do with, what Zone, A -- I mean G through K will be part of the new capacity zone, with the similar token, when you have UPNY/SENY constraints we needs to include all of these bubbles, G through K. Then we look at all those five, do we see an internal constraint south of UPNY/SENY, i.e., we should look at whether the current localities J and K should be part of the new zone, if there is transmission limitation between GHI and J or GHI and K. So that basically would be the focus of the technical studies.

So the next few slides we are going to show you how we perform this technical analysis to show where the system today can afford such a kind of transmission constraint free, such that it advocates that bubble, J-K

should be included if there is transmission limitations, the bubble such as K may not be a good candidate to be part of the new zone.

So slide No. 7. So in order perform this analysis basically to decide whether between J and K, Zone J and Zone K, which one provides the four reliability benefits by including the new zones? So it performed two studies, I mean two aspects of studies. One, again, is the resource adequate, as we said. Another one is transmission security, to make sure that these two criteria are fully met, all along after the new capacity zone.

So more specifically, when we performed resource adequacy, we are trying to look at when the system is at criteria, in other words system is not that long close to the criteria, everybody needs the 117 percent for other zones, except for G and K, in addition, they also meet the requirement of locational specifics such as 86 percent for J and 105 for K.

So when all the resources are kind of distributed this way, let's look at for the new zones, if you can freely move the capacity in the various locations, and then that capacity can be freely delivered to serve the load in the new zone. So that's one test for the resource adequacy.

And also try to look at further, if somewhat,

somehow some zones can add a lot of new capacity into it, so basically the system is going to be much better than the criteria, which is one day in ten years, what would be with reliability improvement that case. So that's one aspect of the test.

Another test is, again, we test transmission security to see under the transmission security analysis sort of deterministic approach, when we see where transmission or generation accumulation of transmission security type of, you know, the disservices or contingencies happen, whether we will have enough capacity to be able to dispatch a run to mitigate those transmission violations under those contingency conditions. So those are the two tasks I'm going to go through very slowly, one at a time.

So, slide No. 8. Once again, the primary test for the resource adequacy is performed based on the system near or at criteria means that you are not very much rich, in other words higher than the requirements. So system is at fund one, NYCA. And when that comes we try to move the resources, we call it relocate, just as if there is a retirement in J but is there a retirement in G through I or vice versa, is retirement generation in G through I with capacity added or in Zone J, can help the retirement that caused the problem in G through I. And we did this

basically two, set up two tests, one is GHI to J, another one is relocate GHI capacity to Zone K.

And the slide, actually let me just jump a little bit, slides No. 9 and 10 actually shows the tests, but before I move to slides 9 and 10 I just want to make sure we understand this. So we did this when the system is near criteria, and also we did it as reflected in slide 11, we did do sort of somehow you could add a lot of capacity in either J and K, to see what overall Zone G through I LOLE improvement would be. So let me walk you through slowly on slides 9, 10 and 11, those slides numbers.

Those slide lines show that when you relocate the generation to say resource from GHI to J. So the way you look at the chart is the horizontal access shows how much megawatts you can do this, basically remove again generation from fictitious request, I was kidding internally, I said it air lifted, so it's not really physically, but assume that's the case. I mean physically it could be one met by retirement in GHI, and the same time there is addition of one megawatt in J. So that horizontal access shows that kind of megawatt movement.

The vertical access shows the system at a criteria of LOLE. So, anything lower than one to 21 means that the system is better. The perfect system of course is LOLE equal to zero, right, and anything higher than .1,

that means that you have the risk of adequacy criterion violation.

So you can see that the blue curve looks pretty straight, in other words it doesn't matter how much megawatt you remove from G through I, it carries the system at better or near or at least better than .1 until it gets to a point on 5800 megawatts. The reference point G through I capacity, as we are speaking, is close to 4500 megawatts. So basically we can afford losing all the capacity in G through I as long as we have the same amount of capacity added to J. So that's what this chart shows.

And similarly, I would like to ask you to move to slide 10, that is you do a similar task, under same conditions, but switch J to K. And you can see that very quickly as you move 300 megawatt the system started violating the resource adequacy criteria.

MR. MEAD: Could I ask another question? If I heard you right, in GHI currently there are 4500 megawatts of capacity. Why is the graph on page 9 going beyond 4500 megawatts?

DR. CHAO: Good question, Dave. As a matter of fact, when we did it we just couldn't believe this is the case, so we fictitiously increased load in G through I, and decreased load in J, similarly net capacity of the load to see how much we are going to drive the LOLE to violation

point. So we did it by another 1400 megawatts, or 1300 something. So that probably fully proves that through of the adequacy of sufficiency of this test, just to make sure that capacity wise the transmission can fully support such a capacity movement, including net load movement.

So I'm on slide 10. So slide 10, again, if you do the similar test, you will find that after you move 300 megawatts from G through I and put them in K, you see a violation.

So just to give you a sense of what 300 megawatt is, so I said it's close to 4500 megawatt in G through I as a resource capacity, so 300 is about 7 percent of that. So in other words, only 7 percent is fungible in a way to GHI and K.

So that gives you sort of a sense of when the system is close or at criteria, this is how much you can move the capacity around, or how in terms of reliability.

Then we also sort of looked at systems completely to the other end. Assuming you add a lot of megawatts in J or K, one at a time, and just look at whether you can drive the loss of load expectation index, basically the reliability measure for GHI to zero, to a perfect system. As we all know when you add capacity to a system without retirement, you definitely have a better reliability; right? So I hope that's common sense.

So when we add thousands and thousands of megawatts into Zone J and we find that the curve on this slide 11, left-hand side of the curve, you see that curve asymptomatically approaches zero. And we skip 3500 megawatt, in other words, we just add 35 brand new generation in Zone J, the GHI reliability approaches to perfect reliability, that is zero for LOLE. So that means that anything after J can help the whole larger region in Zones GHI and J.

Then you do the same thing again for K, and you add the same amount of 3500 megawatts, you find that it actually also improves the reliability, but it stops. No matter actually in this test, we are at 6000, but just for comparison we stopped at 35. So it asymptomatically stopped at .01, in other words, certain capacity that no matter how much you added, will be trapped, will not be able to combine or to help GHI reliability needs.

MR. MEAD: One more, David Mead again. With regard to the left hand graph dealing with adding incremental capacity to the load Zone J; this the LOLE or NYCA as a whole; is that right?

DR. CHAO: For GHI, and just for the three loads.

MR. MEAD: Oh, I see. It says nothing about NYCA, LOLE for NYCA as a whole, or what is going on --

DR. CHAO: That would be better, better as well.

MR. MEAD: My question was going to be, at this point I would presume that GHI with this extra 3500 megawatts might become an exporter to upstate?

DR. CHAO: It could be.

MR. MEAD: My question was going to be, is there enough transmission capacity to realize all of these reliability benefits? But I guess, since the LOLE only deals with the SENY part of NYCA, you don't need to, that's not an issue here?

DR. CHAO: Well, first of all, David, this is a really good question. I want to reinforce the concept. NYCA in our model, the way we look at the system as well as in the market, goes over 11 zones. You could see all the 10 zones have a perfect LOLE, but if there is one zone that has violations then NYCA is violated, so we have to fix that. So that's the issue.

So even though that GHIJ is perfect on this chart, it still could mean somewhere else may have a violation, that's why we want a model that has studied the generation transmission effect of all 11 zones all together, and the one gives you that statewide or NYCA wide requirement, as well as gives you the locational requirement. You cannot afford to do one thing at a time, the mismatch often means you to miss something, so that's

really a good question.

In our system that we do have a transmission limitation in other places, because when you have a transmission limitation you may not be able to fill the capacity that you need of this one of 11 zones.

The probability simulation statistically gives you up to so many simulations, ISO studied 1000 to 1500 drawers in what we call a Monte Carlo simulation, it comes up statistically, kind of adds them up. So that probably gives you a lot of sort of scenarios of that generation originating upstate, in other words, then there is another they are downstate. We do see that when you have say a lot of generation upstate and in the meantime it coincides with upstate, then you could see some, under that scenario some capacity come out from downstate to help upstate.

MR. MEAD: Thank you.

DR. CHAO: So as a summary of slide 12, that it clearly shows that Zone J can serve GHI, in other words, all capacity in GHI can be reallocated to Zone J, and still can flow by, if you will, to help GHI, versus Zone K, but you will find that it's limited, as the chart on slide 10 shows, that limitation is about 300 megawatts.

CHAIRMAN HENSLEY: I have a question, Jesse Hensley from FERC. If I understand it right, initially in

2013 in the stakeholder process Zone K was to be included in the new zone. And so I guess I'm wondering, given your analysis, what changed and why was K suddenly out of the new zone?

DR. CHAO: Well, again, we had in the stability process we took other inputs and presented these three active areas of transmission in one more study, which I will get to. So we analyzed the two, as the way I put it, one is close to criteria or at criteria, versus you just add a lot of capacity, so it depends on where you see this benefit of adding capacity.

What is more reality is that how close that 3500 megawatts you can just add without seeing any retirement. So that gets you to this first, what we call the primary test. The primary test is really to help you that when the system is close to being at criteria, or added criteria or not that much surplus, then can you really afford, you know, to see the capacity retirement or addition at a different location without violating the reliability?

Again, the purpose of the new capacity zone is to create a signal for new capacity to come in. If the new capacity says keep the demand cycles at 500 megawatt, you start with the 500 megawatt, would it be able to solve that resource adequacy need, you put it on Zone K, it cannot help, you put it on Zone J, it does, you put it on GHI, it

does. So that is the so-called relocatable piece of this actually governs the kind of dominant, we call it primary test.

And additionally to that fact is that we also look at the transmission security, because in addition to resource adequacy in the day-to-day operation what is the transmission limitation, which I'm going to get to that.

CHAIRMAN HENSLEY: If I could ask a followup, I think it was in your testimony you referenced a fungibility test; is that the primary only?

DR. CHAO: The primary. Fungibility actually assumes that it's equivalent to interchangeable or relocatable. I used the word in this slide, I was worried that people understand the fungibility word itself. Actually, if you Google it, the word fungibility is not even English, because whether the capacity is fungible, all right, whether the capacity between GHI and J are relocatable. So that's how they are interchangeable.

CHAIRMAN HENSLEY: Are either the primary or initial analysis you did, are either of those codified in the tariff in any place?

DR. CHAO: I'm sorry?

CHAIRMAN HENSLEY: The test that you are running, is this located in the tariff in any place?

DR. CHAO: Located in -- I'm not quite sure what

you are --

MS. KAVANAH: This is Gloria Kavanah with the NYISO. The tariff, it's in Section 516, I believe, of the services tariff. It does not specify the exact tests that are to be performed, but it does provide the parameters for the NYISO to use its judgment in making the determinations for the zone boundaries.

DR. CHAO: Thank you, Gloria. In a way the tariff actually used the study coming out from New York State Reliability Council, shows a reserve margin which I alluded to at the beginning 117 percent, and also tariff required New York ISO to study corresponding to that reserve margin what are the locational requirements, at least before the new capacities in J and K. So, we were basically using the same tool, same concept, for that purpose, so in that case, yes, we used the same process and procedures.

CHAIRMAN HENSLEY: Okay, thank you.

MR. JOHANNING: John Johanning, FERC. When you were simulating the relocating, did you scale generation or load, did you compare them?

DR. CHAO: We scaled load.

MR. JOHANNING: Load.

DR. CHAO: But in a way, the difference -- that's a good question, first of all, not many people

understand this. Generation, you know, is equivalent to forced outage rates, so load is sort of equivalent to the perfect, means that equally is equal to zero, we see that as more of equivalent measure, otherwise what generation, arguably performance and GHI could be better than generation performance in K, so what is to be used? So, again, what is a similar process as has been clearly described in the New York Reliability Council Procedures policy.

Okay, slide 13, that's the second aspect. We look at risk of adequacy, look at system under various conditions, outage conditions of whether it is load or what have you, what would be the extreme conditions system still can meet the loss of load expectation criteria? But in the day-to-day operation you do need to worry whether the transmission that's being distributed, you know, well, such that the existing transmission can deliver the capacity to the load.

So in that aspect we basically followed the NPCC/NERC and also NYC criteria to look at a system that is typically in a designed peak condition, and look at transfer capability under N-1, means that system has one facility, loss of facility. In New York it is quite stringent, it could be multiple facilities as long as there is a common cause, say for example, common tower, stock

breaker.

Also we look at operation wise, we will call it N-1-1 continuous analysis, which means that under that N-1 when you have, when you are running the system, when you see a FERC contingency, you are allowed per the standard within 30 minutes to re-dispatch the generation and restore the system, restate the system back to the normal conditions to be ready for the next contingency.

So when you perform that kind of very exhaustive test, and this is for G through K and G through J, hypothetically of the new zone. And if look at whether you have enough capacity that it affords you to re-dispatch them such as transmission security criteria.

So for that we, slides number 14 and 15 summarizes the result of N-1 and N-1-1 results, so slide 14 summarizes the N-1, the first contingency, and under that contingency what will be a normal and also emergency transfer limit. So specifically from K to Zone GHI and J, the total transfer capability in N-1 normal conditions is 233 megawatts.

Under emergency conditions means that 15 minutes rating of the transmission facilities, transformers, what have you, is the 344 megawatts.

MR. MEAD: David Mead, just so I understand, this 233 megawatt transfer limit, is this true, that under

normal conditions if Long Island has enough generation to meet all of its own internal load, and had enough surplus to export to the rest of the SENY area, the maximum amount of exports would be under normal conditions 233 megawatts?

DR. CHAO: Right, that's correct, G through J.

MR. MEAD: Okay, thanks.

DR. CHAO: Again, here we assume that, because the way, if you will go back to slide 6, the K actually connects to the rest of the system to Zone J as well as Zone I. So that's why in this study if you look at Zone K provides for the rest of New York, so you have GHI and J, so that limits your 233 under normal operating conditions. Again, this could be under FERC minus one, FERC contingency, as well as normal 24 hour rating.

So slide No. 15, we analyze a deeper, another layer of contingency. In other words, when you have a system that is losing one facility, one element of transmission or generation or transformer, and that condition means that operators will be able to re-dispatch within 30 minutes to restore the system to the normal level, in other words, everything is flowing at the 24 hours rating.

And then for contingency conditions under N-1 that is a four-hour rating. So under that condition you are allowed to re-dispatch to put everything under normal,

so that the system can run another 24 hours. Under that condition the system is subject to another second minus one. So under that condition we should make sure there is no violation to the post-contingency, under post-contingency condition there is no violation to the four hours rating or 24 hours rating for certain facilities.

In that case we found that we are short of capacity to dispatch, which is not too surprising to me, because GHIJ and K are south of UPNY/SENY, that is in general, are short of capacity. So we have a lot of limitations to move things around.

And then we look at also specifically under these conditions, whether K can provide much needed capacity under these conditions, and we find it's very, very limited, sometimes less than 233, means you do not even have generation that will be able to flow back, even though you have 233 megawatts under those conditions.

So the N-1-1 slide to summarize that, the system is very limited, not only by transmission but also by resources, in this case specifically generation, that will allow you to do re-dispatch to mitigate post-contingency violations.

So, slide 16 kind of summarizes the two aspects of the test. One is resource adequacy, one is transmission

security. Now, we put all these numbers together you probably can see that first of all the conclusion is very simple, J is fully fungible in terms of capacity. Then under transmission security, where security conditions that you probably do not have enough capacity to begin with, let alone that relying on much less support from K.

So this, I kind of, that's kind of led us to believe that K is not the right candidate to provide the price signal for people to relocate capacity, to help the GHI and J reliability. So the conclusion is that K is not included as a nested zone within the locality of GHI and J.

So I pause here for a second. This kind of concludes the technical background of what is behind in this new capacity zone boundary determination. So next I'm going to switch to -- actually, I'm going to use two slides to describe what we do, what did we do to determine the locational requirements for this new locality, locality GHI and J?

So basically the concept here is that when we define the new requirements we want to make sure we have internal consistency with current RM settings, LCR settings for the interface, RM settings for the NYCA. So that is the thought and that has been the practice, because otherwise the process itself that we have so far today, not

only from the New York ISO but also from the New York Reliability Council's perspective, the whole process.

So, follow that same process, we basically layered the new boundary under that construct, and then further determine the new capacity zone, LCR.

So, basically the graphics on the slide 17 shows that you have I and J are existing, and the new capacity zone that encompasses with the GHI and J, and then what we are trying to do is layering that GHI and J boundary on top of J, and of course localities of GHI.

And slide number 18 describes very specific steps which are seen, and I don't want to go through this in much detail. The very high level, the sixth bullet is very specific process that describes currently under New York State Reliability Consult Policy 5 process, there is a methodology called a unified approach. The unified approach gives you a good point, because you can match various IRM's with different LCR requirements, so there is different pairs of it.

So there this methodology describes at what point, the point sort of is in the middle of the curve at the Tan 45, Tangent 45, so that curve gives you the split between upstate and downstate requirements. Basically it's a locational requirement of J and K versus the systemwide NYCA requirements of IRM.

So basically we layer this new boundary under Tan 45 conditions, that actually is the second bullet, so from that second bullet we layer that boundary in the new, for the new capacity zone on top of it, and then we started to determine what capacity, minimum together, GHI and J need to have.

So in this case we will have after it, J and K are determined, which is current process, we also determine on top of that what would be GHI and J's LCR would be, so that would conclude that process as well as concluding my presentation.

MR. MEAD: One more question, David Mead again from FERC staff. At the end of this Tan 45 process what, or if you know, what is the LOLE that results just from the SENY zones and what is the separate LOLE for the UPNY zone?

DR. CHAO: Actually, that's a good question again. All the points on that curve, the Tan 45 curve, Tan 45 points, actually as well as the Tan 45 points, is that the LOLE is at .1, one day in ten years. So let me finish, let me get there. Yes, there is a small movement in terms of LOLE that are always better than .1; right, because aggregate they have to be at one.

MR. MEAD: Yes.

DR. CHAO: So in theory they could be a little bit about better. So the slight movement, particularly

when we strike this Tan 45 point, is that every system is run at best close to .1, but not too much.

So there is sort of a trade-off between upstate and downstate zones, without fully utilizing the transmission, that's not good, with over subscription of the transmission it could also stress the system. So the nature of Tan 45, there is a lot of material in that regard, actually from 2007 to I guess, to 2009, three years in a row of that study, analyzed what that point is.

So to answer your question in short, the R runs .1, for both the upstate zone and downstate zone.

MR. MEAD: Well, if the two zones, if their loss of loads, are not very highly correlated, then if you had a one outage in ten years in upstate and one outage in ten years downstate, you would have two outages in ten years, and that would violate your LOLE criteria.

So I would have thought that unless the loss of load expectation is very highly corollated upstate and downstate, that the LOLE's for the two big zones, upstate and downstate, would each be significantly better than .1.

DR. CHAO: The scenario that you describe could happen, say for example, if there is a heat wave like we just experienced this summer, it could be statewide heat wave that could lead you to that conclusion, but again, the model not only models generation outages and also an

independent event, and also under certain conditions, you could see that, downstate has a lot of capacity, all of a sudden, you know, as we said, to help upstate's requirements.

The issue here is that this is not just an event, if this event happened it would happen way less than frequent of one day in ten years. So that event could happen in those thousands and thousand of Monte Carlo simulations, but that event would happen much less frequently than the criteria.

MR. MEAD: Thanks.

DR. CHAO: That concludes, Jesse, my piece.

MS. NELSON: Thanks, good morning, my name is Emilie Nelson, and I expect this will be background for many of you but we did think that it would be helpful to review sort of the current structure of the capacity auctions, before handing it over to Rana who will be contemplating what might happen going forward.

So starting on slide 20 just to level set everyone, the capability the year that we reviewed for the capacity auctions runs for the summer from May to October, and for the winter from November through April. And we look at NYCA ICAP requirements which are then translated into an unforced capacity obligation based off of the application and performance factors, and that determines

each LSE's obligation in terms of UCAP.

Load serving entities satisfy their UCAP requirements through a variety of ways. They can self supply, they can establish bilateral transactions from other suppliers, and then they can also establish forward positions in the capability period and monthly auctions, and all of those activities can really occur prior to running the spot, where when you get to the spot auction, what you are trying to evaluate is making sure that the full UCAP obligations for the LSE's have been met.

There is a process described of certification in which we are really trying to establish a mechanism to determine the capacity that's available to be offered in the spot, and then to determine the positions that need to be balanced in that final spot auction run that happens each month. Specific to the spot auction, demand curves are used to translate into UCAP terms and determine the final price. Okay?

So we are going into a little more detail, it's still pretty high level on the capacity auctions on the next slide. Again, we have the capability period auctions where we are awarding bids and offers in this auction and it's used to establish a single price for the entire six months capability period.

We also then have the monthly auction where

participants may buy or sell for the upcoming obligation month and any other remaining months in the capability period.

And then lastly of course, the spot market auction where there are offers to sell for the upcoming obligation month only, and then we are using demand curves to satisfy all the remaining UCAP purchase requirements for the next obligation months.

MR. MEAD: David Mead from FERC again, a quick question. The capacity that's procured in the strip auction and the monthly auctions, how do they get treated for the spot auction, are they sort of bid in at a zero price or are they treated in some other manner?

MS. NELSON: You are right, they are establishing that that aspect has already been filled and I believe that they are bid in at a zero price.

MR. MEAD: Do the entities that hold the rights to the capacity that is procured in either the capability strip auction or monthly auction; do they have the opportunity to bid a positive price?

MS. NELSON: No, when you go through the capability period auctions and the monthly auctions, that's where you are matching up the bids and offers as the participants want to establish.

MS. KAVANAH: This is Gloria Kavanah, just to

add to Emilie's response, when people participate in the capability period and the monthly auctions, when they are offering capacity they are not identifying the specific resource. So right before the spot market auction opens we have a process called certification where if somebody has cleared megawatts of capacity they can identify what the particular resource it is as they are going to use to satisfy that obligation.

So then that's the way we can make sure that that capacity isn't double counted in the spot market, and we also know on the load side, that we have confirmed that the load is being satisfied from a particular resource.

MS. NELSON: Thanks, Gloria.

For today's discussion I think one of the important things to cover is on slide 22, reviewing the pricing hierarchy rules. You know, we have some equations at the top of this slide really describing the nesting of the pricing, and then also the visual below. You know, really the point is that Long Island is considered to be nested within NYCA, so fundamentally, the Long Island price ultimately should be either greater than or equal to the final NYCA price.

And then when you look at the relationship between New York City, Lower Hudson Valley and NYCA, New York City should also be greater than or equal to Lower

Hudson Valley, and then the Lower Hudson Valley area will be set greater than or equal to NYCA.

So when you consider the action outcomes from the capability in the strip where you are matching up the bid and offers to determine what the marginal clearing price is, then when you move into the spot auction and you are considering the demand curve and facilitating the UCAP obligation to determine what the price is, what you are ultimately going to do is sort of overlay these hierarchy rules to make sure that you have the outcomes described. Okay?

CHAIRMAN HENSLEY: Emilie, I have a question.

MS. NELSON: Sure.

CHAIRMAN HENSLEY: The earlier presentation was about resource adequacy. As I understand it there is no economic analysis done of what would happen, for example, if you added those 233 megawatts in terms of capacity clearing prices; is that right?

MS. NELSON: That's right. So I want to make sure I understand your question, Jesse, from the perspective of, if your were to add 233 megawatts into a particular zone, let's say for today's discussion to Zone K, your question is in particular would that be --

CHAIRMAN HENSLEY: When determining whether or not to include a zone or not, make it nested, NYISO does

not use any kind of an economic analysis of pricing impacts?

MS. NELSON: That's right, they use the reliability review that Henry described.

CHAIRMAN HENSLEY: Thank you.

MS. NELSON: Sure. Then lastly, I have already described this to a certain extent, you have an example of sort of the structure of the demand curve on slide 23, and you would establish demand curves for each of the localities, Long Island, New York City and going forward for Lower Hudson Valley, as well as for NYCA, to ultimately determine a preliminary price, and then you are going to review the nesting logic to establish the final price coming out of the spot auction.

MR. MEAD: This is David Mead from FERC staff again. Do I understand the mechanics of the demand curve process, there are -- there is a demand curve for NYCA and each local zone?

MS. NELSON: Correct.

MR. MEAD: And is this correct that any capacity that is procured in the spot auction for an import-constrained zone, Zone K or Zone J, or I suppose at this point even the G-J locality.

MS. NELSON: The Hudson Valley, yes.

MR. MEAD: That capacity will be procured at

whatever the applicable clearing prices for that locality, but then it is then taken and effectively bid in at zero in the NYCA auction?

MS. NELSON: That's correct. So to further your example, David, if you had some excess megawatts available after you established -- oh, I'm sorry. So to further your example, David, if you had excess megawatts available after meeting the Long Island obligation, those megawatts would be considered for NYCA, and they would be considered at a zero offer value.

MR. MEAD: Thanks.

MS. NELSON: Okay. And I think I've made up some time, I'm going to pass it over to Rana.

MS. MUKERJI: Thanks, Emily. I have the distinct privilege of setting the stage for the discussion to follow as to what is in the realm of possibility.

So, Dr. Chao and Emilie described what we do and why we do what we do, and I think we are here to see whether we could do things differently, and specifically whether K or other zones could be modeled in an export-constrained fashion and then be cleared also.

So what I would say is that the answer whether we could model K or other zones in the export-constrained manner is yes. What we really have to very carefully think through the implications and the wisdom of doing that.

Just let me elaborate a little bit on that. I'll refer to Dr. Chao's slide, slide 6, it shows 11 zones, 11 bubbles which are the 11 load zones in New York, so that's the reality of the system.

New York has 11 load zones, each of them are export-constrained to a greater or larger extent, and they all 11 comprise to form NYCA. And we do this, and the IRM, which is the basis of how much we procure in the capacity market is based on a probabilistic Monte Carlo simulation based on the GE MARS model.

So by definition, since every load zone, the failure to reach one day in 10 in any load zone gives a failure in NYCA, every zone is part of NYCA. And the probabilistic simulations which test the IRM, which sets how much we procure in the capacity market, is based on the premise that all zones lean on each other. So it is by definition, and through the probabilistic simulation, all the zones are part of NYCA.

Now, you have to also understand that when you run the auction it's a deterministic process. Now with that said, then Dr. Chao also showed that the transfer capabilities between K to, you know, to the slides 9 and 10, where he says how much are from K can go to GHI, the new capacity zone, and how much GH can go to GHI, he showed that J can enlarge to 5800 megawatts can support GHI, K can

do it for a very limited amount, so the 300 megawatts. Based on that when we formed the new zone, we said that K is excluded.

Now, you have to realize that when we clear the markets, when we first started the market it was clear that J and K were expert-constrained, this was way back in 1999, when NYISO was formed. But at that time we did not model J or K as explicitly, by putting up straw into NYCA, but we did it probabilistically with this LCR concept, the local capacity requirement. And when we did the GHIJ, the nested zone, we also determined probabilistically how much GHIJ has to procure for us to meet this requirement.

So, the three export constraints, the zone, J was always export-constrained, K was always export-constrained. What we treat, all of them are part of NYCA, and we use the concept of LCR, which is also probability, to determine how much capacity we procure, and we did the same for GHI.

We showed that K can support any fungibility that Henry talked about in GHI to a very limited manner, it was like 300 megawatts, that's the basis of that we left K out.

Now, if you were to put K as an export-constrained zone, mechanically we can certainly do that. Now, what does that mean? If K, what we would do is

K would come out and have, instead of being part of the -- if you look at the bubble you have NYCA, you have J, you have K, you have GHIJ, and they all stay within NYCA. NYCA explicitly models a straw into J, and probably another straw into I, and clear that deterministically in the capacity auction. There are questions on what is the limit, is the limit going to be what is in the MAR's analysis which is about 300, or is the limit based on more operational constraints like N-1, may N-2, maybe other limits, what is going to -- are we going to abandon the LCR concept, and what happens when other zones, not just K, suppose that there is a zone that say A is export-constrained; should we model that differently?

My fundamental issue is that we model the capacity market based on the premise that all zones are part of NYCA, LCR's are determined probabilistically, and when we do the analysis, the zones we have seen the nesting of GHI and J, it makes sense based on a probabilistic determination that a large amount of J can clear into GHI.

If you were to abandon that we could come to a construct where K or potentially all 11 zones are individual bubbles, with some kind of a requirement, could be IRM, could be that 17 percent IRM, with every connection between zone to zone modeled deterministically in the auction process.

So then we have certain questions as to what are the limits, are they the limits we used in MARS or are they other limits, is this the right way to do it, because now we are taking a probabilistic construct and putting it into a deterministic auction, what other kind of, you know, what is the action rules, what are mitigation rules, and there is a whole slew of things.

So what I would again say that, yes, it can be done, we really have to have a lot of discussion in the stakeholder process and really examine is this really the right construct? And implementation wise it's also very significant, because it really up ends how we run the auction process, it would be a complete rewrite of our software, and a complete departure from the current construct.

So essentially it can be done in the capacity in K, currently synchs in NYCA because we use the probabilistic construct that all load zones are part of NYCA. If you separate out K you don't know where, whether it should continue to synch in NYCA and the questions of the wisdom of using a probabilistic construct with pulling out a zone and using a deterministic construct and clearing the auction.

And there is a question about how you determine the limits. MARS uses certain limits, but I'm not sure

that those are the correct limits to use if you go to the deterministic clearing of auctions.

So, again, this is something we will take in the stakeholder process. One of the things I also wanted to mention is that one of our market monitors MMU's, one of the recommendations are in question of predetermined zones. We have this as an activity that we are going to undertake this year. The question of predetermined -- we support that concept of terms of predetermined zones, that you can have predetermined zones that can clear based on the supply and demand situation, but then the fundamental question is, are those predetermined zones based on the current concept of every zone clearing in NYCA, every zone which clears in NYCA is based on the LCR concept, but we can look at alternate structures where you have all 11 zones, they are modeled as separate export constrained bubbles, and they have connections between the bubbles, and we model that. That's a construct that we haven't explored in the stakeholder process in the past, we will do that.

So what I have fundamentally personally I have questioned the wisdom of taking individual zones as an export-constrained zone within, and leaving parts of the current construct, which is based on a probabilistic model, but we are willing to explore that in the stakeholder process in the coming months.

CHAIRMAN HENSLEY: I have a question, Rana, Jesse Hensley from FERC, before you could get to having all 11 zones being modeled as an export-restrained zone would each of those zones not have to fail the high reliability test and sort of be created as a new capacity zone?

MS. MUKERJI: Well, if you were to, yes, that's the current structure, but we believe that MMU, maybe you can just predetermine the zones, and pre-determining zones could be saying that the 11 zones have recognized transmission limitations so they will not bind, unless the pipes are not horizontal. So one of the recommendations has been that instead of doing this deliverability test every three years, just set them up once and for all, if they bind when the supply and demand situation change.

CHAIRMAN HENSLEY: I'm just wondering if there is no sort of deliverability constraint, why would you want separate pricing within that zone?

MS. MUKERJI: The beauty is that they will not be separate pricing if there is no constraints, the pricing converges. So setting this up predetermined say, when there is no constraint the prices just converge. Setting it up doesn't necessarily give you different prices.

CHAIRMAN HENSLEY: Okay, the advantage is lost on me then if there is no difference in price.

MS. MUKERJI: The fact is that you are not doing

it every three years, so you have it an the prices separate dynamically.

CHAIRMAN HENSLEY: Okay, thank you.

MR. VANSHAICK: So may there is the potential for a price upgrade, warranted by the constraints or the --

CHAIRMAN HENSLEY: I see, sort of in a realtime conditions.

MR. VANSHAICK: In a monthly sense.

CHAIRMAN HENSLEY: Yeah, in a monthly sense, yes.

MR. VANSHAICK: Is now a good time for other comments or --

CHAIRMAN HENSLEY: Yes, I think if that's the end of your presentation, Rana, I think we are just going to open it up to the panel. I see Pallas with his hand up.

MR. VANSHAICK: This is Pallas LeeVanShaick with Potomac Economic, the MMU. So there is a lot of great information in this presentation, I thought it was good in terms of, you know, providing good information about reliability issues as well as all the moving parts that are affected by what we are talking about here. But in particular I thought the slides on 9, 10 and 11 were pretty interesting for informing my thinking.

So I think 9 and 10 really do a great job of illustrating this concern about fungibility, which I just

learned is not a word, but it probably will become one after this process works its way through the dictionary.

But, so I guess the point here that Zone K capacity is not fungible with other capacity, and I'm not really aware of anyone challenging that basic observation from the models. And if something happens after you get 300 megawatts excess over criteria on slide 10 here, if something happens after that where Zone K capacity stops being quite as valuable as capacity in other areas, I'm sorry, G through I, and J, but when we look at slide 11 I think that that does put that in some context, because if I look here at the LOLE and, you know, often it's easy to not pay attention to the Y axis but, you know, basically G through I, even though NYCA in its entirety has to meet the one day in ten-year standard, you can see that G through I is really the most sensitive area with the highest LOLE, so it's certainly the main driver for the NYCA, the NYCA LOLE.

Now, as you go down these two curves, if you sort of trace out the points, and I know they are not on the same graph, but if they were on the same graph you would see like if you add 1000 to Zone J, you move the LOLE from nine days in 100 years to less than three days in a 100 years, or right about three days in 100 years.

If you were to put the same amount of capacity in Zone K you would go from nine days in 100 years down to

three and a half days in 100 years.

And I think, you know, when you get kind of similar, different but still proportionately -- similar proportion impacts if you add more than 1000 megawatts. And I think as you go beyond 1000 megawatts, we probably don't need to worry too much about what the implications are once we've gone past the 1000 or 1500 megawatts in Zone K.

But I think the basic, my basic take away here is that it may be that Zone K capacity is not quite as valuable for reliability as G through J, but if I could add, it seems to me that it has something like 90 percent of the LOLE reducing value as capacity in G through J. So it does seem like it's warranted that you would consider paying something above what the NYCA curve would dictate or what the Zone K curve itself would dictate.

So in order to get some kind of balance between those two extremes, one is not including it, the other is including it, it seems like the most practical thing is to have some kind of limited ability for it to sell into the outlying area.

And I think, you know, you could do that with a hard constraint, and I think the term that Rana was using is deterministically, you could imagine a fixed amount of megawatts leaving Long Island and being used to support G

through J, or a larger G through K Zone, but this does suggest that you probably have some kind of diminishing benefits as you add more Zone K capacity.

So at some point, having something between the two extremes might be preferable, because if you don't want to send the signal that capacity in Zone K is of the same value as G through J, then seems like a good way to do that is to come up with some kind of ratio, some kind of benefit ratio that relates to doing things.

So, if you think there is some point at which the benefits diminish, the best way to reflect that would be through a benefit ratio that would be used to discount the values capacity in Long Island. So, this is akin to like a ship factor, but in this case it would be based on, the most natural thing for it to be based on would be when these export limits affect the ability for you to improve the LOLE, and it seems to me that, you know, looking at how, what the incremental impacts of additional capacity are on the LOLE is the most natural way to do that, and that's, while that's not done in any kind of deterministic way in the demand curve process, the split of the demand curves and the demand process are based -- are reasonably consistent with the notion that you get decreasing benefits if you add more capacity, so having a similar, some kind of similar valuation of exports from Long Island.

MS. MUKERJI: How is Long Island different from Zone A? Say that New York City has a price, they have 86 percent or whatever LCR, so they obviously are not procuring 100 percent from New York City, some of that capacity comes from upstate. Upstate is using the same argument, you could say, is why upstate is not clearing at the higher price.

MR. VANSHAICK: Yes. So when you say Zone A are you saying something specific about Zone A or are you talking more generally about G through I?

MS. MUKERJI: I think more A through F or NYCA, some of New York City depends on NYCA for some its capacity, for its synch, so why wouldn't, the same argument could hold, you could break up K as an export zone, then you would go to that why not A, why not B, why not C, you go through that route.

MR. VANSHAICK: Yes. So the -- you're right, the A through F provides benefits in terms of reducing your LOLE, and the primary way to reflect that is through the NYCA demand curve. So hopefully the NYCA demand curve is set, you know, even though it's not explicitly done on this basis, it should be set in a way that roughly reflects the benefits that NYCA capacity provides to the state as a whole.

MS. MUKERJI: K is part of NYCA so K is part of

that.

MR. VANSHAICK: Yes, and so it may be that you add capacity to Zone A, and it does have some impact on LOLE's outside Southeast New York, but it does have some limited impact on the LOLE's inside Southeast New York, it's just, it's limited by the fact that you have this significant transmission constraint for Southeast New York, but it ultimately comes down to some proportion.

So if you looked at the NYCA curves and you found that the incentives for people to build in NYCA were wildly inaccurate because of the issue that we are talking about, then that would create some basis for saying that something different ought to be done.

I think this discussion at the interzone level has only really come up I think with Zone K, and perhaps in B, but Zone K in that, you know, because it's clear that it does provide a great deal of benefit, and that might not be reflected in the Zone K demand curve itself.

MR. MILLER: May I just ask one clarifying question?

CHAIRMAN HENSLEY: Rich Miller from ConEd.

MR. MILLER: Sorry, I Rich Miller from ConEd, I was going to give my name after I was given permission.

Just taking the converse of the question that Rana had, using your theory again, if it was found that

there was a reliability benefit that K could provide to J, then you would also allow K to sell into J and not just to the Lower Hudson Valley; correct?

MR. VANSHAICK: Yes, in theory, but I think that the, sort of the information that has been provided is very supportive of doing something with --

MS. MUKERJI: But the fact is the current construct is that it's done based on NYCA, all groups in NYCA depend on each other, everybody participates in NYCA, export constrained zones like J and K and GHIJ, they reflect the export constraints through an LCR, which is a probabilistic construct, which drives their price higher than the NYCA, but there is nothing in the current construct, and I question the merits of having things which are outside of constraint zones getting a higher price, because they support limited amounts of benefits, which is what we are struggling with, which I'm struggling with here.

MR. YAFFE: David Yaffe, could I ask a question?

CHAIRMAN HENSLEY: Yes, we want to allow you to make your statement as well. I don't know if you would rather wait until this dies down or in response to that or just go ahead and make your statement, but --

MR. YAFFE: Well, let me set the question here, because I'm trying to square Pallas' comment with the

presentation and the approach that I have heard, and it's clear that in the presentation of the NYISO the value of LIPA capacity has been discounted, so to speak, and the process has been described. It is a very crude statement, but you have already recognized what, how much capacity is available, is it worth including LIPA in the zone and make the determination that Zone K should not be included in the zone because of the limitation?

Now, when you shift to talking about putting a discount on the price of Zone K capacity wherever it's sold, I'm missing the relationship and what that is supposed to signify in the concept of a demand curve in an auction. Why you would discount, you would then again discount the capacity, it just doesn't quite, I'm having trouble making the two consents square.

MR. VANSHAICK: Is that a question for me?

CHAIRMAN HENSLEY: Sure.

MR. VANSHAICK: So I think the reason why it's important to discount it, is that if you want to have efficient benefits for people that invest in different areas, it's important that you reflect the benefits that they provide the system for the resource adequacy, at least, and you do that with the demand curve logic, and the demand curves in each place.

And the difference with this is you would relate

the, you would, looks like, discount only slightly the effectiveness of Zone K capacity, or meeting the -- you could either do it as Zone G through J demand curve, or you could start recasting to get the same prices and same quantities if you characterized it as Zone G through K, but the point is that you get to a point where Zone K capacity is a little bit less effective, but it's still very effective, and if you are going to have efficient prices you need to reflect that.

MS. MUKERJI: Clarifying question, how does the demand curve factor into -- the demand curve is set based on the cost of new entry, and once the net cost of new entry and then you have determined slope and clearing point, there is nothing there which recognizes the fact of what is clearing in the other zones.

So I was confused by, are you suggesting that you would adjust the demand curve based on expected clearing prices in other zones?

MR. VANSHAICK: No, what I mean is if you sell a megawatt in Zone K that, no, you would have to do some normalization, but on the margin what it looks like, if you sell a megawatt in Zone K, and that would be equivalent to some proportion, some discounted amount of megawatts towards the G through J curve. So let's say it was 50 percent, just so we don't put any numbers in people's

heads, but you know, the benefit of half a megawatt of capacity in G through J would be reflected in the Zone K price, and sales of capacity in Zone K would on this discounted basis go to meet the requirements.

CHAIRMAN HENSLEY: I think in the interest of time I want to get LIPA's statement and then I think Dr. Sasson also has comments he wants to make.

MR. MAGER: Excellent.

MR. CLARKE: I'm David Clarke, I'm the Deputy Director of ISO RTO policy for the Long Island Power Authority, we are now doing business as Power Supply in Long Island, thanks.

FERC has convened this conference to address the question of whether or not Zone K should be modeled with an export-constrained zone and in New York's ICAP market. LIPA's general view is that given the current physical circumstance, NYISO's broad market structures and specific rules, Zone K should not be modeled as an export constrained zone.

Among other issues the answer hinges on the impact such modeling would have on the LCR and demand curve in Zone K, capacity prices in Zone K, the ability of suppliers in Zone K to sell capacity into new capacity zone and in the rest of the state, and the applicability of buyer mitigation to a new capacity in Zone K if it's nested

within a new mitigated capacity zone.

Without understanding these impacts, it's difficult for LIPA to conclude that simulating Zone K as an export-constrained zone make sense, either for LIPA customers or for the market in general.

First, while an LSE like LIPA could contribute more to solving a non-local reliability need than it contributes to that need, it's not clear that stimulating Zone K as a exit constrained zone would appropriately recognize or value that contribution. While transmission limits the contribution LIPA's generation resources can make outside of its zone, how likely that transmission is to bind will depend on where in the NYCA a supply inadequacy occurs. We see some advantage in the market sending a market signal and providing an incentive that pays a local LSE for an excess reliability contribution outside of its zone. Nonetheless, we do not believe that including Long Island in a future new capacity zone and applying the current NYISO market mitigation rules, plus an export limit, would lead to this result or to a successful outcome.

As a preliminary matter, it's unclear whether modeling Long Island as an exit-constrained region would require Long Island to be part of a larger sub-zone, I think that was a point that was made earlier. Thus, FERC

and staff have recognized that a key design question is whether one would need to model Long Island as a part of a new capacity zone in order to model it as an exit-constrained region.

Make no mistake, under the current physical circumstance there are technical difficulties in determining the highly dynamic amount of capacity that could be made available for export from the Long Island zone, and the tariff changes that would be required, but allowing excess generation on Long Island to sell into an adjoining new capacity zone for pay might be an alternative if appropriate market structures could be developed or if the physical constraints are relieved sometime in the future.

Simulating the exit limit from Long Island to the new zone is not straightforward. As NYISO has demonstrated, the exit constraint depends on which generators, especially which Long Island generators, and which Long Island Western transmission are available. NYISO also demonstrated that the salient exit constraint differed depending on whether the capacity inadequacy being addressed is in New York City, Zone J, or in the Lower Hudson Valley, Zones G through I, or even Zone A through F.

So defining the appropriate value of an exit constraint is both more difficult and more dynamic than it

seems. Thus, modeling Long Island in a future new capacity zone with an export limitation could pose significant difficulties.

NYISO's buyer-side mitigation rules do not work well when applied to Zone K, a nested zone with a minimum requirement that could exceed the requirement of the zone within which it would be nested. In such a circumstance, an LSE that procures capacity to meet its minimum requirement in the smaller zone would be a net seller in the larger zone in which it is nested.

NYISO's rules apply the buyer side determination of the smaller zone to these net sellers. Generally speaking, applying buyer-side market power rules to LSE's that by virtue of meeting their auction requirements are net sellers in the larger zone, in other words structural net sellers, that's what we call them, within which they are nested, does not make sense. Nor would a PJM-style self-supply exemptions with upper and lower limits on the amount of exempt self-supply address this fundamental problem.

The status quo does not interfere with Long Island Power Authority's ability to meet its obligations to load and this is important, and fundamental changes to the structure of NYISO's buyer side mitigation rules would be needed before LIPA could be reasonably be included in a new

capacity zone.

NYISO's current structure for allocating deliverability rights among new and existing generators would also not work well, as the NYISO structure does not define who gets the right to the limited exit capability associated with the Long Island zone.

These are just a few of the issues we see with including Zone K as an exit-constrained zone. In sum, we have a long way to go before including Long Island in a new capacity zone makes sense, and we are doubtful as to whether such an outcome would be workable or worthwhile.

Thank you.

CHAIRMAN HENSLEY: Do people want to respond to LIPO, otherwise I'm going to move to Dr. Sasson who I know wanted to make some comments.

DR. SASSON: What time were you planning to break?

CHAIRMAN HENSLEY: How about 10:45?

DR. SASSON: All right. I will do a few minutes, and I think I'm going to start where I think David had asked a question about LOLE, and so I'm going to start more or less with your question, which I found was interesting.

Loss of load expectation is measured in the ability and number of times in the course of ten years that

the system will be able to meet load, or how many times it wasn't able the meet load. So when the main council does its IRM LCR siting, it tries to say, well, what are the minimum resources that would provide an ability level of loss of load of .1, a level of one in ten years, the whole NYCA is control area is not going to be able to meet the load, and we will have to disconnect load. So, that is the criteria; right?

Now, when you look at the NYCA as a whole at .1 the question might be well, how much, what is the ability to reach these 11 zones? Okay, and for example, I looked up that GH and I as a super zone is about .09, a hair below .1. J, New York City, is also about the same level, about .09. K is better. K is about .06, I'm rounding the numbers.

Okay. But you may ask, David, I don't know if that's your question, but if not I'll ask it and answer it. How can you have J at point .09 and GHI at .09, and yet NYCA as a whole is only just a little bit better .1; right, so .011. Well, the reason is that when you look at a zone there may be more than one load disconnections at a particular hour, but it's all counted as one, okay.

When you look at two zones you also do the same, that is, the disconnection in one zone, and in another zone if they happen in the same hour as far as NYCA, it's

counted as one, and that's why it is not additive. Okay? So let's keep that in mind.

The second point that I wanted to make, is that the NYISO, and Dr. Chao, with respect to your diagrams which are pretty good diagrams, I'll start with diagram in page six, which you all have, and we are talking about everything south of Zone C, with the idea that all of the zones above Zone C have surplus generation, because the way the calculations are done, the market programs are run, without getting into too technical detail, we need to look at two factors. One is a particular zone and the LOLE which can be helped by, if it's deficient in the sense that it has less resources than load, can be helped to prevent disconnections; right, by other zones. So, surplus zones can help deficient zones.

So with UPNY obviously everything above is surplus, UPNY/SENY through this interface capacity can come down, that capacity can help all deficient zones south of that interface, in particular, if you look at GHI, it's deficient, not by a lot, but it is, J is deficient by about 2000 megawatts, and K is also deficient.

So the amount of power, of capacity coming down is a sign in the program in a ratio of how much deficient each zone is, when it's most efficient it gives more, and when it's less efficient it gives less, but there is help

coming in.

The second factor is the zone resources obviously help meet the load and prevent loss of load. So you have those two factors, its own resources and the help that it gets, and let's keep that also in mind.

So with that I want to turn to, first of all to 11, which has been already discussed here quite a bit. So I have a couple of observations on 11. First of all, 3500 megawatts, and I think everybody can see that these curves really come down quite a bit, this one is a little bit more, but it does come down quite a bit, 3500 megawatts is quite a bit, quite a lot of megawatts, and it's healthy.

Later on on the other tests we are going to say there is a transmission limitation of about 300 megawatts, but, I don't know how 3500 megawatts can get through when the limitation is 300 megawatts. But it can help quite a bit. Now, the NYISO also makes the argument that K helps less than J, because K will point down to .01, where J was essentially zero.

However, what we are plotting GHI in these curves, what would happen if we plot NYCA as a whole? So fortunately the NYISO did that for us in the January 30th presentation of the ICAP working group, and we can -- so somebody has done it.

The black one is NYCA, okay. So this one is the

zone is G through J, excluding K, it goes down to about .01. It starts at .1, but it goes to -- because that's the starting point, but it goes down to .01. Look what happens when K is included, the black one goes through the same .01.

So from a NYCA as a whole, then the contribution of J and the contribution of K is very, very similar, and that can be explained statistically from a probability, which I'm not going to try and do, but at least from the results point of view they are very similar, when you look at de facto NYCA as a whole. So that's one thing that I wanted. To me this doesn't say that K is better than J or J is better than K, the results to me show that they are about the same.

Now, we go to the other curve, which is the one that has the 300 is what page -- oh, I'm looking at this presentation, no wonder I can't find it, I knew it was right here. Okay, so now let's go to 9 and 10.

Let's go to 10 first. Okay. My assertion is that the so-called fungibility test, the way to present it is not a measure of the ability of J or K to help NYCA, I have always said that NYCA made no mistake as far as their calculations, the numbers are all correct, the graphs are all correct, but if we do an experiment you have got to make sure your interpretation of the results are correct,

if not you may end up with the wrong conclusion, and I think this is what is happening here.

So let's see. The system as normally is much, much better than .1, the council tries to find the minimum requirements, for that it has to throw out generation left and right, so the system is worse and worse until it gets to .1. Fortunately we are much better than .1, although we have more blackouts than we should or more disconnections, but we need to know what the minimum is, and to do that you throw a lot of generation out.

If you looked at the fungibility tests, I know that isn't in the dictionary, I was hearing only on a train, hopefully we don't need to use it, what is happening? Let's say, and I'm going to make it easier by breaking it up into two steps. The fungibility test you transfer generation or resources from GHI to K or GHI to J, right, and see with the impact is, but I think it's probably better and easier to understand what happens if you do it in two steps.

First of all let's take, let's say 100 megawatts or 500 megawatts from GHI. Remember we are starting from a system at .1 for NYCA, and each load area, each area has its own LOLE with GHI very close to .1, .09. What happens if we throw away 500 megawatts from GHI, it's probably going to go through the roof, it's going to go way up, the

LOLE is going to go way up, it doesn't have enough resources.

What happens if we put that same amount of resources in K now after we have done that first step? Okay, so first thing that's going to happen when you put resources in K is that K now needs less help from UPNY coming down, because now it has more resources. It needs less help to not have load disconnections; therefore, it's clear that amount of generation, of resources, to now help GHI.

Now, the question then is, does it help on a one-to-one basis exactly? Now, what have we done? We have taken 500 megawatts out, put it over here in K, K then says I don't need 500 megawatts that was coming down from UPNY through the transmission into K, so that amount is reduced, but then that amount can now come and stay in GHI, because K doesn't need it. So the amount flowing into K has been reduced.

Well, the LOLE of GHI that had went very high when you took the 500 out, it's going to come back down. The question is, does it come down exactly where it was before? And the answer to that is, no. And if this was a load flow for those, then, yes, if we forget losses, it would. But LOLE that comes back to the question we started with, is a count of how many load disconnections we have,

and load disconnections at the same hour are not counted as two but as one.

When you take all of that into account it turns out that you bring it back down, but not exactly to where it was, in fact it's a little bit higher. So instead of .09, 500 megawatts, it might be just a little bit above .1. Does that mean that the K did not help, was not able to help? It did, it did help, because it just took generation away, it went way up, now it went back down, but it didn't go back down exactly to the same point, because of loss of load expectation is not local. So it did help.

Now the fact that it went over .1, does that mean that K is not helping? Well, we can say, okay, why don't we add another 500, take another 500 off GHI, it's going to go way up again, put them in K. Well, it's going to come down again.

Isn't that what they showed us in slide 11, that we could keep on going, not just with that 300 megawatts, we could go to 1000 megawatts, and it's helping.

So what I'm really saying is that no mistakes were done in any calculation. The fact that the NYISO chose to have the system at .1, with GHI very close to .1, as you shift 100 megawatts, 200 megawatts, the process I just described is going to happen, but what happens is that the .09 is inching up to .1. When you hit 300 megawatts it

just goes right above .1.

In fact, very little transmission is being used. In fact, what has been happening is that we are reducing the amount of flow into K, because K is saying I don't need it, I'm getting more resources now, I don't need it as much.

CHAIRMAN HENSLEY: We'll want to allow time for Central Hudson to --

DR. SASSON: Okay. So in summary then, I think K is resolved the NYISO percent, the test NYISO percentage, and that the conclusion is K helps considerably to NYCA, to GHI, and should be part of the, should have been part of the new capacity zone for that reason. And to me it's a reliability issue, we need to the incent of the whole idea here of the new capacity zone is to incent generation where it helps, to build where it helps. These results are showing that in GHI through K it would help, all of the new capacity zones. Thank you.

CHAIRMAN HENSLEY: Yes. I think maybe break at say 11:00 we'll say, and maybe five minutes for Multiple Intervenors, and then five minutes for Multiple Intervenors and then five minutes for Central Hudson; does that work?

MR. MAGER: Okay, thank you. My name is Michael Mager, I represent Multiple Intervenors, which is an association of approximately 55 to 60 of New York State's

largest energy consumers. I also want to address the question of whether Zone K should be included within the new capacity zone, and to do that, I first I wanted to follow up on a question that you had asked, Jesse, about the NYISO's original interpretation of its tariff, from its presentations around that time, and I'm referring now to that January 30th presentation, but it's in others as well.

The initial interpretation was quote, "If excess capacity in an individual load zone within the region of consideration for a new capacity zone can improve the reliability and security of a potential new capacity zone it is the sole consideration for including that load zone as part of the new capacity zone."

And that was the interpretation for some period of time, and then the NYISO changed its interpretation and it started comparing the assistance that Zone K can provide with the assistance that Zone J can provide. And I guess at the outset I want to say that we disagree with the relevance of that type of comparison.

I don't think there is any doubt or question or dispute that Zone J provides a lot of assistance to G through I, more assistance than K, and Zone J should be included within the new capacity zone, that hasn't been disputed as far as I know.

So the question, so there is no doubt or

controversy that Zone K provides less assistance than Zone J, but what I think the relevant question is, is does Zone K provide enough assistance that it should be included within the new capacity zone? And on this I think the numbers, I don't think are in dispute. We don't take issue with the NYISO's conclusions. Basically I'll work off of the 300 megawatt number. They basically have found that Zone K can provide 300 megawatts of assistance to the new, to G through I.

So the question is, is that relevant, is that sufficient, is there enough that it should be included or should it be essentially disregarded and left out of the capacity zone? And on that point we looked at things differently than the ISO.

The demand curves are based on a proxy, peaking units, that's the foundation of the ISO's demand curves, the purpose of establishing this new capacity zone is to send appropriate price signals.

The price signals and demand curves are based, the prices in the capacity markets are based largely on the demand curves which are founded on the cost of a proxy peaking unit, that would be the type of unit that would be used to meet a reliability need. And in the NYISO's last demand curve reset process as well as the process prior to that, the size of the proxy peaking unit is approximately

200 megawatts, something between 200 and 210.

So, the proxy peaking unit which provides the foundation of the demand curve can be sited in Zone K, and provide its full assistance to G through I.

The other point that we found relevant in looking at this issue, was that throughout the Spring of 2013, the NYISO presented a number of presentations to market participants, and there is one on March 27th that we cited to in our prior pleadings, about the tightness for the upcoming Summer 2013 period, that things were going to be tight as a result of generator retirements throughout the state as well as load growth within the Southeastern New York region.

And the NYISO presented analyses showing that the margin of available surplus capacity to ensure the ability to meet load requirements in Southeastern New York during high load periods was only slightly greater than 200 megawatts.

And so if an ISO is showing during an upcoming high peak period in the Summer, excess capacity of roughly 200 megawatts, in our view how can potential assistance from Zone K, which we say is 300, be deemed insignificant or immaterial, not enough to warrant being included in the zone?

So, we looked at it very differently. Based on

the demand curves as well as reliability concerns within the NYISO, we have concluded that 300 megawatts of assistance is material, and right now by excluding that assistance from the new capacity zone it's essentially being ignored. And it can be recognized by including it in the zone, or there are alternatives such as modeling it as an export-constrained zone, and we agree with the NYISO that to do it is not a simple or easy task and probably requires a lot of work in the stakeholder process to implement, but we would like to see the assistance that Zone K does provide, which we believe is material, recognized at least in time for the text demand curve reset process in three years. Thank you.

CHAIRMAN HENSLEY: Thank you.

I guess in the interest of time we will move right to Central Hudson.

MR. BORCHER: Good morning, my name is John Borcher, Senior Director of Energy Policy and Transmission Development for Central Hudson. Central Hudson remains concerned that Zone K has not been considered as part of the new capacity zone. We agreed with Dr. Chao in his statement early on that all the zones, GHIJ and K contribute to the need for constraint with the transmission flows, and that constraint is what resulted in the development of the new capacity zones.

Part of our, one of our main concerns is the way that the reverse flow from the Zone K into GHI has been modeled, that 300 megawatts is highly dependent on where generation is located, even within Zone K.

Dr. Sasson had mentioned and outlined that in his affidavit in this case early on, and it was a challenge to that NYISO's calculation of that interface, and I don't think that that's ever been really seriously addressed.

The other piece that Central Hudson remains concerned with is Zone K's current physical circumstance is somewhat caused or being caused by the LIPA's term Vertical Integrated Utility Model. They are both a transmission, LSC is the project for load area as well as a supplier. They have voiced even today the concern of discounting capacity and keeping out of the new capacity zone as a way to be able to sell surplus capacity into the zone.

We have got concerns that they are part of the cause of the new capacity zone, GHIJ, and holding their hand part of the solution, but are torn as part of that solution by being a supplier, a want-to-be supplier to that.

So, Central Hudson has stated through this whole case that we believe that Zone K does belong in the zone, and they were part of the cause of that new capacity zone, and still remain a viable supplier of capacity into Zone

GHI.

CHAIRMAN HENSLEY: I think we have plenty of time later after the break to open it up for anyone that has further questions, but I think for the sake of our transcriber, why don't we take a 15-minute break until 11:15 and come back and we'll start with staff questions.

(10:58 a.m. -- recess -- 11:18 a.m.)

CHAIRMAN HENSLEY: All right, I think we'll go ahead and get started back up.

In the interest of letting everyone at the table have a chance to make a statement, I'm going to let Rich Miller have a few minutes statement to make.

MR. MILLER: Yes. First, I would like to thank staff for allowing Dr. Sasson to come in and review his technical issues that he previously raised in this proceeding but, you know, obviously we fully understand that this issue was already resolved once by the Commission and, you know, we are not saying that the Commission made a wrong decision on the tariff at that time, in fact, you know, we have obviously re-read the decision and what the Commission found was that the NYISO had complied with its tariff.

The issue that we think is worthy of further consideration and discussion is whether there should be more proscriptive language in the tariff going forward to

determine what the boundaries of the capacity zone would be. And, we do note that there is a strict numerical metric-based test to determine whether a new zone should be created or not, but that there isn't similar language applicable to determining the boundaries of that zone, but we think that it is just as important as the decision whether to create a zone or not in terms of its impacts on the market, and that in terms of predictability and certainty for all market participants going forward, that this is something that definitely merits further consideration, though we would say that it is clearly something that should be discussed in the stakeholder process.

And just one final note, we clearly support the statement by Rana Mukerji that with respect to the proposal for the export-constrained zone, we do think it does merit further consideration, we are not taking a position for or against, but we fully support his statement that this is a matter that should be discussed within the NYISO stakeholder process and resolved by the NYISO stakeholders, because it's obviously something that contemplates very significant changes to the operation of the NYISO capacity market.

Thank you.

CHAIRMAN HENSLEY: We want to have staff

questions from the Commission and get those out of the way and then we can throw it open to people from the audience if they want to ask questions, or more dialogue among the panelists. So, David Mead.

MR. MEAD: Yeah, David Mead, from the FERC staff, I have a few questions for Dr. Chao. Dr. Chao, if I heard correctly, you indicated that the analysis you did that underlies your slides are based on the system being at or near criterion.

DR. CHAO: Correct.

MR. MEAD: So Long Island, as you mentioned, has a 100 -- a local capacity requirement of 105 percent of forecasted peak load. And so your analysis, if I understand it correctly, was based on the presumption that Long Island was at or near the 105 percent load.

DR. CHAO: It was at 105.

MR. MEAD: I went on the NYISO website a little earlier and I have some, what I hope are accurate and recent statistics. The forecast peak for Long Island, according to the website for Long Island, was roughly 5500 megawatts. And so if you apply the 105 percent requirement that gets you to a local requirement of almost 5600 megawatts. And the total requirement is 117 percent of peak load, so the difference between 117 and 105 percent is 12 percent, which I believe is roughly 660 megawatts.

So is it fair to infer then that these requirements presume the capability for Long Island to import 660 megawatts of capacity? I guess that's my first question.

DR. CHAO: I think you are right. So basically Long Island for, I mean you folks from NYISO can help, in order to meet its requirements, both the statewide requirement and the LCR for K, is to say basically they need to purchase 105 from local generation of resources in a line, and then the rest from the rest of the state anywhere, it could be all in a line, but it has to be fully needed for the 117 percent for the criteria, so there are two criteria.

MR. MEAD: Then these roughly 660 megawatts of imported capacity would all come through the GHI part of the system; is that correct?

DR. CHAO: Correct.

MR. MEAD: Okay.

MR. CLARKE: Can I elaborate or --

MR. MEAD: Please, go ahead.

MR. CLARKE: So with respect to the capacity that comes from outside of Long Island, over the crosstown cable or Neptune cable, et cetera, et cetera, we make an election prior to the time that the NYISO sets the capacity requirement, the LCR requirement, the election we make is

how much we are going to be importing. That is used to offset in part what the locality requirements would be. So either you -- the locality requirement is reduced to the extent that we import capacity over either the crosstown cable or the Neptune cable.

MR. MEAD: I understood earlier, maybe I misunderstood, that imports over the crosstown cable or the other --

DR. SASSON: Neptune.

MR. MEAD: -- Neptune, went towards the 105 percent local requirement, and to the extent that you elect to do so, that's fine, but there is still underlying the requirements here an ability to import 660 megawatts from the rest of NYCA, presumably located in the Zones A through F; is that --

MR. YAFFE: That's not necessarily true. It's the 105 percent has to come either from the imports to the cable, which provide for firm capacity on Long Island, or from other Long Island generation, but the differential doesn't have to come from A through J, it could, some part of it may come from Zone K itself, it's just that only the 105 percent has to come from --

MR. MEAD: No, my understanding is that the 105 percent is the minimum requirement that has to come from either generation located in Zone K or else imported

through these --

MR. YAFFE: Two cables, yes.

MR. MEAD: -- and that Long Island may elect to procure more than this minimum amount.

MR. CLARKE: This is Dave Clarke, absent the connections to the rest of the NYCA, the requirement on Long Island would be higher. And this is, as folks have alluded to previously, all of the requirements are lower because we work as part of an interconnected system.

So if it weren't for transmission that allowed power to go into Long Island or out of Long Island, not only would our requirement, local requirement be higher, but the other local requirements would be higher as well.

MR. MEAD: That sounds like the import -- that imports over say the crosstown cable go not towards the local requirement, but rather towards the NYCA requirement, the 117 percent requirement.

MR. CLARKE: No, they go to the Long Island, they count against the Long Island requirement. The point I was trying to make was that when you don't import capacity there is a change in the locality requirement based on the tie benefit, that's different from the smaller amount than if you actually have a capacity-backed transaction. So it is a little more subtle point, maybe it wasn't particularly to your question, but --

MR. MEAD: I'm sorry, finish your point.

MR. CLARKE: That was it.

MR. MEAD: I'm -- this is a question, is my understanding correct, and that is, based on the 105 percent local requirement and the 117 percent NYCA requirement, that seems to presume that there is enough transmission transfer capability for Long Island to import up to roughly 660 megawatts from Zones A through F; is that a correct presumption?

DR. CHAO: Yes. So, in other words, I mean I don't know how accurate the 660 number is, but assume it runs into that number, a portion, maybe all could be procured from the rest of the state.

MS. MUKERJI: Let me just say, but this is a probability. The load of Long Island is 100 percent, they have to get 105, and then it has to get another 12 from NYCA, and NYCA is from A through K.

And the question is that, you know, based on this probabilistic thing of one day in ten years across NYCA. So it should not really put the deterministic that this 600 megawatt is coming through this wire at this instant because it is run through about 1500 simulations of different outage stage.

MR. MEAD: Again, I presume since the requirements are here, this permits Long Island to import

up to 660 megawatts from Zones A through F, and then the presumption is that most of the time there is enough transmission transfer capability for that to happen.

MS. MUKERJI: The requirements of 105 percent is a NYCA, it's not a Long Island.

MR. MEAD: No, I understand. Loads of -- isn't that true, that loads in Long Island must procure 117 percent of their forecast peak load, and they can procure up to 660 megawatts, or whatever -- check my numbers later, but it's the 12 percent of peak load.

MS. MUKERJI: Anywhere in NYCA.

MR. CLARKE: Including Long Island.

MR. MEAD: Right, but it could be coming from A through F.

MR. MAGER: Actually I would suspect it would be because that's where it's by far the most economical, in terms of a loads-serving entity meeting its requirements, their capacity prices in the rest of the state or upstate traditionally have been much lower. So you know, if K has to procure additional capacity it would, the load serving-entities would certainly want to procure it from A through F as opposed to J where capacity prices are much higher.

MR. MEAD: So my next question or point is that starting with this 660 megawatt import, which is sort of

the at-criterion situation, if Long Island were to add capacity over and above this 105 percent, let's say they added an extra 100 megawatts, that that would make an additional 100 megawatts available to GHI because that 100 megawatts previously was going through GHI anyway, and now it can be retained for the benefit of GHI because Long Island doesn't need it anymore; is that a fair --

DR. CHAO: I think that's a fair, I guess assessment, but you have got to make sure in reality when you design the system you expect kind of, if there is 100 megawatt capacity addition.

So basically it goes to the Long Island, I mean LIPA's original resource planning criteria, when they have long term service agreement, whatever, whichever the form is that is appropriate, for its load, it has its own proper planning process, they have their target. Another day there is a minimum to the Mike Mager's point, it's a missed cost, how much they can lean on the neighboring zones within NYCA, and whether they achieve the minimum costs to service it or not.

MR. CLARKE: Remember this goes both ways. You are talking about peak load of 100 percent, and in the case that you are talking about is 105 percent locality requirement. So the ICAP that's necessary on Long Island exceeds the load, which means sometimes you are going to

have situations where you have outages that require the power to come in, and other times you are going to have all the capacity available, which allows Long Island to serve outside of its zone, but it's not just in one direction where you are reducing upstate, but you are also in a direction where, sometimes you are in the direction where you have a sufficiency of capacity on Long Island that can drastically exceed inadequacy outside of Long Island.

MS. MUKERJI: If you just sort of see the capacity of Long Island in the MARS model, Long Island into J, plus I zones, is 344 megawatts. So, and we look at NYCA, the one day in ten based on the totality of A through K, so there are instances when that 344 goes from K all the way to helping J, it could be from J to GHI to A, and then there is a different limit from the other way into Long Island. Those limits are not the same, by the way, it's bidirectional, different limits on both directions, and at times when Long Island is short, and it depends that A through J to supply Long Island.

In totality, NYCA has to be better than one day in ten years, so you cannot take one instance and try to solve of a load flow when you come to capacity.

MR. MEAD: I understand. My questions are going toward the issue of how much capacity is fungible between GHI and K? And again, let me, if I could finish this

point, is this presumption correct, that the local requirements, the 105 percent for Long Island, the 88 percent for the G-J locality and the 86 percent for J, all -- that's presuming everybody is at criterion, and that includes Long Island, so that means that Long Island for this analytical purpose is presumed to import 660 megawatts. If that's so, and then Long Island added 660 megawatts to Long Island, wouldn't that free up 660 megawatts of capacity that's perfectly fungible with loads in GHIJ.

DR. CHAO: Well, actually as shown in one of the slides that indeed everybody, if say GHI and J and K, and GHI as a zone 88 percent, so you have, all of a sudden you add surplus. You add surplus amount, 660 on top of that criteria, yes, it would be as shown in that curve. But I will caution you that, you know, you look at market done on this, do you see the market will retain such surplus in the long run?

And very likely if this is the same capacity zone, when you all of a sudden add a surplus, as we have seen in our system, capacity for the most part. And how long you want to be dealing with that, just because somebody is at capacity, and then you try to design a system that's not prepared for a real market signal, to need the correct location of the needed capacity, in this

case when you consider this limitation of 344, that's the signal, that you have got the market signal in the F through K, you are going to see that constraint due to transmission to supply to J, but if you put them in the market, ignore that constraint, you are going to see retirement because the market has its own dynamics.

MS. MUKERJI: To put it another way, if everybody is in the criteria and you keep adding stuff to K, it improves reliability that we have seen in GHI and J, but in terms of the market, that's why we did this, the fundamental test, the first set, you are saying if something retired, if everybody in criteria, GHI was in criteria, J was in criteria, K was in criteria, and if you add stuff in K, it helps everybody.

But, if you retire something in GHI, which is Lower Hudson Valley, instead of building in GHI, you build in K, only a very limited amount, 300 megawatts seems to help.

MR. MEAD: That's what I'm stumbling over, if -- let me --

MR. YAFFE: Can I give a different construct, because I think you've got, you are putting two things together that don't quite match, and I sympathize with you. There is a deliverability issue, and that's what you're trying to line up, you know, how do megawatts flow, if it's

got to be to Long Island or whatever. And then there is the way in which the market, the planning criteria of the 117 percent is set for the New York Control Area as a whole, okay, so the local capacity requirement really represents the amount of the total capacity in the New York Control Area that LIPA or LHV or New York City has to have from local sources, the capacity has to be deliverable in that region in that capacity, but everything above that comes from, the computer guys will kill me, but comes from the cloud, comes from the entire New York Control Area without tracing, without ensuring that the time-specific resources to specific needs in specific areas.

But what Henry is also talking about, just to give you a real example, I mean is that a couple years ago the Danskammer plant blew up. The Danskammer plant is not in Zone K, but because the Danskammer plant blew up the local capacity requirement on Long Island increased because of these various, because of the multiple simulations that they do and come up with the capacity requirement, and the way, you know, the needs for local capacity shakes out after you do those simulations, I'm not an engineer. So the difference between local capacity requirement and the total is not treated the same way, it doesn't mean the same in terms of where capacity is located.

MR. MEAD: Actually, can I suggest if you want

to talk put your thing up and it will be first come first served.

CHAIRMAN HENSLEY: Sounds good.

MR. MEAD: Dr. Sasson and Mr. Chan.

DR. SASSON: I think you are up to something here. What really is, is that the capability of Long Island to assist GHI and all of the other zones, all of NYCA is much, much greater than 300 megawatts. In fact, 300 megawatts is not a transmission limitation from point of view of LOLE, it isn't. The 300 megawatt is only due to the way the test was performed, that 300 megawatts LOLE equals above .1, that is not a measure of the transmission limitation.

I think that is the fundamental question that we need to go back, and as Rick Miller was saying, I think we should take this back to the stakeholder process and go through the details of how this whole process works, how the LOLE works, which we have done now in very, very great detail; 300 megawatts is not the transmission limitation of Long Island previously. And that's why you are having trouble in putting all the pieces together, because it isn't.

MR. MEAD: Mr. Chan.

MR. CHAN: My name is Ting Chan from Central Hudson. One of my responsibilities is to cover the NYISO's

market issues, and attend the taskforce and committee meetings. As I'm glad they brought up the Danskammer example, because one of the pieces that has been missing from this discussion has been Long Island has to be part of the new capacity zone, for this thing is interrelated in terms of how the resource adequacy calculation is done when they perform the LOLE test.

For instance, when Danskammer, which is located in Zone G, it's downstream of UPNY/CE interface, when that retired it caused the Long Island location capacity requirement to go up from 102 percent to 105 percent, but if you add generation, but the converse is true, because if you add generation in Zone G it would result in lowering the location capacity requirements of Long Island.

So there is a benefit essentially of adding capacity in Zone G that would directly benefit Long Island, so if they are not part of the zone there is a mismatch in terms of what is going on in terms of, you know, they are part of the reason why the LOLE has got triggered is because is they are downstream of the scene. At the same time if they are not part of the zone they are not asked to pay or at least contribute to solving the problem for that local capacity that has failed in this case.

And essentially, if you take Long Island out of the mix, essentially, you know, one concern comes to mind

in terms of the mismatch how we did the resource adequacy tests calculation of LOLE, of Long Island is treated as part of Southeast New York when they are doing this loss of load expectation, and this shifting of the out of Zone K and J, for instance, to A through F when they are calculating what the resource adequacy calculation but then now you are excluding it, and looking at loss of load expectation and trying to calculate what is the locational load capacity requirement of Long Island, one of the things they do is they shift generation requirement out of zones and K, to do that locational capacity requirement, to compute the locational capacity requirement of New York City and Long Island in this case, but then now you are excluding it. So any generation you add in G is going to lower that locational capacity requirement and will benefit Long Island customers.

So any generation you add in F is going to load that location requirement and will benefit Long Island customers. So it's a really dynamic relationship that is going on that cannot be ignored. And like Dr. Sasson from Con Edison indicated, you can't just look at the transmission limitations, because the NYISO announces that it is correct, but you have to look at it from the specific perspective, but you have got to look at it from the comprehensive approach of looking at, well, how does that

impact other types of studies that are being done, and are they looking at it from the same perspective when they are computing the criteria that is being applied.

MS. MUKERJI: I just wanted to go back to that case, why, and everything is in the criteria, and you add additional capacity in K, and why it makes things better. The way the LOLE criteria, this one day in ten years and the .09 goes down to lower numbers is based on these Monte Carlo simulations which are run. So essentially it goes better because you have additional capacity in GHIJ and K, so when the Monte Carlo simulation comes with a large outage of 2000 or 3000 megawatts, instead of getting a violation you have more extra capacity in K to serve that.

So it means that in more extreme cases of the Monte Carlo simulation where you have large amounts of capacity out in GHI, there is excess capacity in K which can still supply that and get within one in ten.

So that shows that everybody is in criteria, and your adding additional capacity, reliability seems to improve.

Now, that is, as Henry said, that's an unrealistic case, because what happens when there is a retirement in GHI, Lower Hudson Valley, and the market signals if it's the same everywhere it will say, okay, let's put a power plant in K, and as soon as you do that,

what happens in the Monte Carlo simulation is now when GHI was in criteria there was less violations in GHI, because GHI there was sufficient capacity in GHI.

As soon as you have less capacity in GHI, GHI is going to be short under many more conditions, and during those conditions how much can it supply from K? And it violates that one in ten criteria within 300 megawatts.

So let me just go to the Danskammer example, it's a 500 megawatt plant, if you put about 500 megawatts in Long Island, you can only get about 300 out. So if you retire the Danskammer and built it in K, you're not going to get one in ten days if you do that. So, it's fundamentally the whole, the market solves a deterministic load flow type of situation for every condition, but these requirements are based on probabilistic simulations over many conditions.

So that's the reason why adding additional capacity seems to be helping reliability, but when you take one for one fungibility you get into the real hard limits that you cannot retire a unit in Lower Hudson Valley and put it in Long Island and supply it.

MR. MEAD: Can you explain, we start out with this at-criterion situation in all parts of NYCA, and then we add some generation in Long Island, Long Island, of course, is now more reliable. Doesn't that -- let's say

it's 100 megawatts; doesn't that allow GHI to retain 100 megawatts more of A to F capacity that otherwise was going to be moved to Long Island? And if so, why doesn't that make that 100 megawatts fungible?

DR. CHAO: Let me answer that question. I think that there is a general confusion. You have got to look at these in perspective perhaps in two cycles, in two years. Why? Let me tell you why. When you have a retirement in this scenario of Danskammer, J LCR went up, K LCR went up, so the systemwide NYCA requirement also went up, but because of the sort of -- actually it did go up by 0.3 percentage of the statewide, and the locational J went up by 2.5, K went up by 3 percent in that example.

Now, year on, next year you do the same study, you define all of this. What matters is still the transmission that affects the capability that provides capacity certainly in the zone, still is the dominant fact. Whether it is 300 or not, it's still going to be the 300, the only thing that changes, the capacity mix in different zones, GHI went down, K went up, so next year you are going see higher.

So, what I'm trying to say here is you have got to recognize the system condition, transmission create the dominant effect. If there is no transmission, I would say you have no transmission constraint between the zones, I

would say, yes, case K -- should we ask J, and it would be part of this, G through K, your capacity zone, but the change in system condition could increase LCR's to the case.

Your 100 megawatt today is surplus, given next year, new condition, your surplus is gone. I give you one example. I think Long Island today is about 109, 110 percent, what this year's reserve requirement is 107 from 105. So how much, how accurate you want to really project for the future, we are talking about capacity, we are talking long term, long term economics follow the market.

MR. MEAD: I see -- let me just ask one more question then we let me throw it.

What I gathered from your slides was that roughly 300, that roughly 300 megawatts of export from Long Island was fungible. And I guess what I come to is that in order get the 300 megawatts, first of all you have to eliminate the imports, and the imports are 660 megawatts. So why does it not follow that the -- from the current at-criterion situation, that you could add 900 megawatts roughly of capacity to Long Island and make it fungible with GHI, because in order to get 300 megawatts of export you first have to eliminate 660 megawatts of import.

Let me pose that question and then --

MR. CLARKE: Can I take a shot at that?

MR. MEAD: Does NYISO want to respond first?

DR. CHAO: Sure. My quick answer is, when you have a new system, new condition specifically, you are going to go through the whole process of statewide RM study, and then locational LCR study. That balance point that we are talking about just a moment ago, can move you to a different point. The whole reason of that movement is not because you have -- in addition to your capacity condition movement, but also the overarching question here is, were the transmission limits the capacity movements, always this year, going to be next year or year after, yes, until we fix the transmission. Because the relationship of RM LCR can change year after year, in our system a couple years ago we were 15 percent RM, and then 16 percent RM, 115, 116, before it was like 118 and then 117. So this thing changes, whenever there is a change, the LCR, corresponding LCR's change as well.

MR. MEAD: Mr. Clarke and then back to Dr. Sasson.

MR. CLARKE: Let me take a step back because I think we are talking about 300 megawatts and I think we are looking at the tiny piece at the top of the big puzzle. First thing, all areas help other areas and that's what the interconnect system is for. When we are talking about

Long Island, all the Long Island capacity helps up to its minimum requirement, plus the LCR's, so it's not just, the 300 number is a highly dynamic number, it's not just the 300 megawatt amount that it can help, all the capacity on Long Island helps up to 300 megawatts.

Now, as Henry has said, right now the system has more than 300 megawatts of additional capacity, so the question is do we want to add new capacity on Long Island as a way of providing additional help to G through I, and the answer is no.

So the parallel question going back to Long Island, is it's a 650 megawatt limit? It's a capacity that can help toward meeting the NYCA requirement is all of the capacity in NYCA UPNY/SENY, plus the amount that can be moved into Long Island, not just the amount that can be moved into Long Island accounts.

So I think you need to think about it more in terms of all the capacities matter, any piece of capacity that you take out makes a difference.

Now, it makes less of a difference if you have an aggregate amount of capacity that exceeds the minimum requirement plus the limit, so I think that's a better way to look at the issue.

MR. MEAD: Pallas?

MR. VANSHAICK: If I were to try to answer the

question again, I'm coming at this from maybe a higher level rather than as practitioner, I think you are basically, I think the key point here you have in this analysis that models all of these simulations of different conditions, they differ from one another in part because of the forced outages that occur; right?

So you could have 105 percent of the load in Long Island held its capacity, so you have more capacity than load, so you might say, well, why do I need anything, the reason is that 105 percent has to be discounted by all the forced outages that are made.

So the reality is that most of the time in these simulations Long Island is importing. If they are import-constrained then that's pretty straightforward. I don't think that's the case you are worried about.

When Long Island is not import-constrained in these cases, let's say it's sort of at some intermediate level, I think what you said is true, adding 100 megawatts to Long Island is probably going to give you a one-for-one change in the amount that has to be brought into Long Island, which means there is 100 megawatts available somewhere upstream, could be G through I, just depends how the simulation tries to --

MR. MEAD: Well, it all comes through GHI, I mean it doesn't come from anyplace else.

MR. VANSHAICK: Yes. The point is it is displacing something somewhere outside, and making that 100 megawatts available where it's needed outside, that could be in different places, but GHI is one of them, certainly.

Now, if you're at this extreme where if you start raising the amount of capacity you have of 105 to the point where even after you model all those forced outages you get to the point where, even with all those forced outages you still have more generation running in Long Island than load, then you start to have to think about these export cases where, you know, it turns out that if your generation is all available in a particular simulation run, then you may have more than a 344 megawatt excess of supply there, and so if you add 100 megawatts in that case you then, that's a case where you don't add any reliability outside Long Island because the additional 100 megawatt supply or 900 megawatt supply or whatever it is, is no longer able to displace something somewhere else.

So, it really comes down to being a question, you know, whether Zone K can provide benefit, really comes down to a question of how often you're in this case where your generation availability in Long Island is so good that it is, you know, you have used up your export capability, and you can no longer displace capacity outside because, you know, you basically have gotten the maximum amount of

benefit anyone can get from Zone K.

So I think the situation we are in is where we are not in that, if you looked at individual simulation runs, I don't think we are in a case where we are seeing lots of circumstances where we are close to blackout and we are using the 344 export, because in this scenarios you are going to find that the forced outage rates are not resulting in that.

So I don't know if that helps at all with the paradox between having more generation than you have load, but at the same time usually being in a circumstance where you're importing, but having it be occasionally maybe one out of every ten times or two of out every ten times, where you are close to very tight circumstances in your simulation, maybe one out of ten times or two out of ten times your 100 megawatts that you added to Long Island doesn't displace anything outside or maybe only displaces 50 megawatts outside. So, does that help?

MR. MEAD: Let's see, you are next.

DR. SASSON: Okay. David, in my opinion you are right, okay, and we could try to discuss that in technical or you can just look at the NYISO's results. This is the curves on page 11, adding capacity in case. You came up with an example of adding 100 or 600, in other words, here is the effect. It actually helps GHI, and this is done,

these curves are drawn from running LOLE cases. So all of the dynamics available and so forth that we are talking about are already embedded in these results, adding capacity K, helps at GHI, at 100, at 600, at 1000, at 2000 it helps.

MS. MUKERJI: I think you are talking about two slides previously which was to the fungibility.

DR. SASSON: Now, the question here, if Rana wants me to do this, I will be glad to do that just to oblige him, 300, 300 is not the limit of K helping GHI, 300 is the amount that you can shift from GHI to K before the LOLE of NYCA goes above .1, that is not a measure of the ability of K to help GHI, it's a measure of when did you hit .1, and that depends on what was the starting point.

The starting point of GHI is very close to .1 already, so it doesn't take much that you lose from GHI that you are going to get it all back when you put it into K that you go above .1, has nothing to do with transmission limitations. If it would then there is just no way, there is no way that you can add this amount of generation in K and help GHI. So why, it should be limited at 300, and it isn't.

So this is the true graph. The fungibility test is a different kind of test asking a very different question, and the answer to that is correct, that at 300

you reach .1, but that does not mean that there has been a transmission limitation or that above 300, and if I asked NYISO to do these calculations, put more than 300, but that's what they did here; right? It helped.

So why is it that reaching from .09 to .1 in GHI is a measure of the export capability of Long Island, okay, it isn't. And I think that's the crux of now to the real question, and I think this, in our opinion should be debated at the national stakeholder process again because we need to make sure that technically what we are doing is correct.

CHAIRMAN HENSLEY: Could I ask a follow on to Dr. Sasson? Jesse Hensley, FERC. Given that you have I think a hard transmission limitation of 344, would it make sense in your opinion to model Zone K as an export-constrained zone for something greater than 344 megawatts, notwithstanding the curve and then you can add lots of surplus, but you have this hard limitation?

DR. SASSON: Okay, that's a good question.

When the NYISO did this curve it did not look at transmission limitations within Long Island. It's just saying I thought I had Long Island as one box, without any limitations internally, and I can put more generation in Long Island, and this is the result.

Now, you are right, that within Long Island

there is Eastern Long Island and Western Long Island. Western Long Island is part that is connected to GHI. If you put generation in Western Long Island it's going to come out. If you put it in Eastern Long Island there is a, something we have known for many years, there is about a four-mile area where there is a bottleneck.

Now, we said -- I said in my affidavit, that if generation is going to earn capacity now that we have requirements, then it needs to be deliverable, that is something we put into the market. So any generation that is going to site on the Eastern part of Long Island better address this four-mile bottleneck or else it's not going to be able to earn capacity.

So I'm assuming then that that would make it uneconomical to site in the Eastern part of Long Island unless you are prepared to do this, or you could skate around, so anything that sites in the Eastern part of Long Island addresses that limitation.

In fact LIPA has some RFP's out there, and if I remember right, Dave, you can correct me if I'm wrong, I think one of the requirements in at least one of those RFP's is that whatever for new generation that it has to be deliverable.

MR. CLARKE: I will address that when you get to me.

DR. SASSON: Okay, which means it has to address this bottleneck. Once it's addressed in this bottleneck the 344 is no longer there.

CHAIRMAN HENSLEY: So you could send the price signal but it might come at the expense of very high generation interconnection costs?

DR. SASSON: It would be, if it's on the Eastern part.

MR. MILLER: Only in one portion.

DR. SASSON: Only the Eastern, but not the Western portion.

DR. CHAO: Could I have a clarifying question? Just to give you folks of the concept of slide 6, the east-west, and it's the Western Long Island that Dr. Sasson referred to, has to be at the tail end immediately of the 344 kV, before even reaching that Long Island or the rest of the Long Island, because the constraining transmission is Glenwood, and basically that's from that connecting point to the rest of the state. That's the constraining piece of the transmission line for Long Island, actually it's four circuits.

MR. CLARKE: Do you mind if I address this issue first?

DR. SASSON: Sure.

MR. CLARKE: I think I disagree with Mayer's

conclusion. If you add generation and then you add transmission to make that deliverable, the issue is you may be in the same place, you've added more generation, you have added more transmission, maybe your execution would go up a bit, but you have more generation now that is bottled. So that's the issue and you are still kind of in the same place when it comes to the next increment of generation.

DR. SASSON: No --

CHAIRMAN HENSLEY: I think just -- I mean to hone it back in on the tech conference, it's just purely an issue of modeling Zone K as an export-constrained zone, I think some of these are interesting philosophical questions about what happens year in and year out as we go forward, but just as a reminder, we are kind of constrained within this conference as to what we are discussing.

MR. CHAN: Let me try to answer your question, David, a different way. I mean what everybody has -- all the answers that have been provided are technically correct, but I think it could be very confusing. Maybe the best way to think about it is let's say starting with your starting point of the Long Island load is 117 percent, the location capacity requirement is 105 percent. And your question was, well, if you add additional generating capacity above the 105 percent level in Long Island would it have a direct benefit or direct

result on the GHI for instance?

And you have asked a very good question because the answer is it does have an indirect method, because it has indirect benefit because as you add more generation capacity on Long Island before the 105 percent level, let's say add up to the 117 percent level, at that point you can think of, you could remove Long Island out of the picture.

So when we go back to let's say slide 6, if you want to look at the boundary diagram, just to follow, the only C and E interface is what is separating E and F and G, the transmission capability is now imported into the capacity from A through F, State into GHI, and if Long Island doesn't need to use any piece of that because now it has built 117 percent of generation, to me that's a reserve requirement, so now the full capability can be utilized by Zone G through J, whereas right now if they do not, if they only have 105 percent generating capacity right now for the locational capacity requirement, they would have to essentially have 12 percent that they are trying to essentially meet their requirement with, what they are allowed to do with A through F, would have to utilize that path which is UPNY/SENY interface, and that's what triggered the low voltage tests in terms of why we need a new capacity zone.

So, indirectly it does help if you add capacity

in Long Island, because now that whole interface can now be fully utilized by G through J, as opposed to having to share part of it with Long Island. So, in that sense it does help the reliability in G through J, and that's when you go back to slide 11 of the NYISO's presentation as ConEd has pointed out, it does show on the graph that as you generate capacity in Long Island, yet it doesn't get the an LOLE of zero, but it does go down from the graph of .09 to .01.

So that's why looking at this, the NYISO looks at it from one perspective, I can understand at the time why they look at it from the perspective of if you add that capability, would that add, help GHI? And they did an analysis and it is based on the transmission-constraint, but once again, based on the way you do resource adequacy analysis, as Dr. Sasson from ConEd was trying to point out, the transmission constraint is incorporated within the reliability analysis, but it cannot be used as just a definitive number. The magic number is 300 megawatts, and that's all you could supply in capacity benefits from Long Island to GHI and J in this case, because essentially if your add more generating capacity in Long Island you're allowing G through J to use more of the transmission constraint, no longer having to share with Long Island. So that's an indirect benefit in answer to your question.

DR. CHAO: I just want to add something very quick to it. I think that Jesse brought up a good point, and I want to make sure, you know, I echo and I support that. We are talking about reality. Give you a sense of why we did this in slide 11, we put slide 11 indeed to ignore other transmission. So what is the major transmission, 138 kV, it does not support 3500 megawatt in that capacity addition, we did it just to analyze.

I think Jesse's point is what is in the connection cost, development costs, whether it has enough transmission to support all of that, that new addition, that's what is considered in slide 11.

MR. MEAD: Without -- I mean we can have a debate about the specific numbers, but starting at-criterion situation, if we add some additional capacity to Long Island, is there any scenario in which GHI and J would be unable to obtain any reliability benefit from the additional imports that it can basically take that are no longer going to Long Island? Is there pretty much always some reliability benefit that GHIJ can get when you add additional capacity to Long Island over and above the at-criterion level?

DR. CHAO: I would say it should always, whenever you add capacity to system anywhere, it will improve and be a help, there will be a better reliability

to the system anywhere you add capacity. The issue here is that specifically for Zone K, when you add capacity in Zone K, can you get it out, over the transmission limit?

MR. MEAD: So today Zone K is not nested within GHIJ, and so as I understand it, therefore, if in an auction Long Island procures more resources within Long Island than the 105 percent, none of whatever reliability benefit could accrue to GHIJ is reflected in the amount of capacity that GHIJ has to procure within its boundaries.

Whereas, if K were to become nested within GHIJ so we have a G to K locality, then in those instances when Long Island procures more than its capacity requirement, the local capacity requirement, there is a one for one, one megawatt for one megawatt ability for the rest of the zone to reduce the amount of resources it has to procure locally, and it can sort of basically steal, if I can use that word, more of the imports from A to F that are flowing over the, over that part of the transmission line. Is that a fair characterization of the issue here?

MR. CLARKE: No.

MR. VANSHAICK: I don't think so.

MR. MEAD: It is not? Mr. Clarke, can you take that up?

MR. CLARKE: Can I take a shot at it. You started out by saying that if Long Island at its LCR there

is no benefit that it provides in terms of the locality requirement, the G through J zone in terms of the locality requirement that -- sorry, the G through J is set at, and that's not correct, because when you set the, as NYISO has said previously, when you set the G through J requirement you simulate Long Island at its minimum LCR, and that capacity, there are certain draws that you can make when you are doing reliability assessment where there is more capacity than load on Long Island. Those draws make a difference and help to improve the loss of load probability in the G through J zone.

There are other draws as met as Mayer has pointed out where Long Island requires power from the other regions. I think that's a separate question and that's part of what this mutual assistance of the transmission system does. But, the premise is wrong when we are at our minimum LCR, and we are connected, G through J has a lower locality requirement than they would if we were not connected.

MR. MEAD: Are you saying that in any -- I guess I thought these minimum requirements were set for some period of time, and you know, the outcome of a particular auction would not affect the local. For example, today we have 105 percent local requirement for Long Island --

MS. MUKERJI: That's for LCR. Now, what Dave is

saying, the LCR of GHIJ reflects conditions where Long Island is helping GHI, that's the whole fundamental thing I'm trying to say, that LCR is a probabilistic concept, it reflects the fact that Long Island in many instances helps GHI. So you set the local capacity requirement recognizing the fact that Long Island helps, that's why I have a fundamental problem of separating it out from an export-constrained zone, and you are taking basically LCR concept and essentially throwing it out of the window, and you have to have a whole different concept then.

So if you had these, this whole question is based on this local capacity requirement which shows that the interconnect system exits in one area and helps in other areas. The LCR is a probabilistic constraint by which we procure capacity. So if you take that construct away and say that everybody else procures 117 percent because it's a NYCA IRM, it's a whole different construct, and we have to examine, again my understanding of the stakeholder process, if it makes sense, because the whole LCR construct is based on the planning probabilistic construct which says that there are some instances Long Island helps GHI, the LCR is based, recognizing the fact that Long Island helps GHI, and it goes the reverse way, too, that there are instances when GHI and A through J

also helps K.

MR. MEAD: Are you saying that starting with today Long Island has 105 percent local requirement, if over the next year Long Island in every auction procured more than 105 percent, let's say 106 percent of its forecast peak load from local resources, that by that fact alone and nothing else changed, that the local requirement in G through J would be reduced?

MS. MUKERJI: No, that's nothing to do with what I'm saying. I'm saying the LCR's are based on LCR's, it has nothing to do with how we clear the auctions. LCR is based on probabilistic simulations which reflect the fact that excess in Long Island helps GHIJ. And we procure the market in the capacity market based on that determination, which is fixed for a year, and then we revisit it when conditions change once a year.

MR. MEAD: As I understand the notion of a nested zone it is that the imported, the zone at the end of the line, certainly J, and possibly K, has its own local requirement, but if we nest K within G-J so that we now have a G-K locality, that there is an aggregate local requirement for G-K, and if there was no export constraints, as much a capacity could be located in any of those zones, including Zone K.

If we make it an export-constrained zone then we

say, well, we can locate some additional capacity in Zone K to meet this local requirement for G-K, but it's limited. So -- and as a result, to the extent that Long Island is procuring more than 105 percent locally, that means we can procure less in the rest of G-K, whereas if K is not nested then any additional local capacity over and above 105 percent does not reduce the local requirement for G to J. And so in essence the imports that are reduced because Long Island is now procuring more locally, are not used anywhere in SENY, but they go back --

MR. MUKERJI: I think there are a lot of things being mixed with what you are saying, because there are lots of things being mixed, because every area has an LCR. NYCA has an LCR of 117 percent, J has an LCR of 86 percent, K has an LCR of 105 percent, GHIJ has an LCR of 88 percent, and that has nothing to the all to do with the clearing of the auction.

MS. NELSON: It's an input to the auction.

MS. MUKERJI: Yes, once you do the LCR's you procure the auction, let's get that fundamentally clear, that auction results do not affect the LCR. If we were to include K in a nested zone you would have to determine then an LCR for K, but I'll go by slide 6 of Henry's slide 9 --

MR. MEAD: Let me just ask, I presume that the LCR for K stays the same whether or not K is nested, the

issue is what is the LCR for G-J if there is no nesting or G-K if there is nesting of Zone K?

MS. MUKERJI: Correct, so there wouldn't have been G to K LCR, and we based it on slide 9 of Henry's, says you cannot do the substitution, and we said this is -- because, so it's not part of it. So the question is that the LCR's reflect the fact that excess in K helps, as well as where you were coming, your original question was how do you reflect the fact that that people build K, if we build in Zone K benefits GHIJ, it benefits by the fact that the GHIJ's LCR is lower.

And that's really the fundamental problem, do you base it on LCR or do you base it as a bubble as an export-constrained zone? That is really the crux of this technical conference.

MR. MEAD: If we add K, if we nest K within the new capacity zone, I presume that the other things equal, the LCR of the new JGK will be higher than it is today, because the LCR for the big zone, which is the G to K, has to be sort of a weighted average.

MS. MUKERJI: What do you mean higher, higher than NYCA, it is not going to be higher than 117 percent.

MR. MEAD: No, no, no, right now it's 88 percent. I thought somebody said if you add K it would be 93 percent.

DR. SASSON: That was in my affidavit.
MS. MUKERJI: It would be some number.
MR. MEAD: But it would be higher than 88 percent; do you agree with that?
MS. MUKERJI: I haven't. I'll take Mayer's affidavit on word, because he did the simulation, yes, I presume it's 93 percent.
DR. SASSON: I think it is 92 percent.
MS. MUKERJI: Yes, 92 percent, yes, it is a number which will be higher, okay. So Henry can confirm, yes, that is a number.
DR. CHAO: Yes, that is a number.
MS. MUKERJI: But the fact is when you do an LCR for K through G, G through K, you would then presume that every megawatt in K, whether it's in the tip of Montauk Point, can go to the Hudson valley, you are making that assumption.
CHAIRMAN HENSLEY: Could you model it as an export-constrained zone and not create a new LCR out of it?
MS. MUKERJI: That's the whole fundamental problem. If you do the export-constrained zone, my fundamental issue is that is not, that doesn't comport with the whole fundamental structure, that it is based on a reliability probabilistic construct with IRM, LCR's are a probabilistic construct. As soon as you do it with the LCR

with the finite transmission limit, it doesn't become a probabilistic construct anymore when you clear the market.

CHAIRMAN HENSLEY: That's because you are running all of these scenarios so you can set LCR for the next year so you can hit your number.

MR. MEAD: What in your view is the difference between a nested zone without export-constraint versus a nested zone with an export-constraint, what is the practical difference between those two scenarios? By the way, I presume that Zone J is an example of a nested zone without an export-constraint.

MS. MUKERJI: My issue is if you do it for one area, if you do it for K, I don't see why we shouldn't do it for all 11 areas.

MR. MAGER: You are talking about the export-constraints?

MR. MEAD: Just so I understand what your understanding of an export-constrained zone is, what does that mean, how does that mean, how does making K an export-constrained zone differ that is nested, how does that differ from making K nested without an export-constrained zone, without an export-constraint?

MS. MUKERJI: K can be nested, that means everything in K clears in the new zone. When K

is export-constrained it means K is a distinct load area, it has a finite transmission limit which connects it to J and I, and GHIJ, so that's the difference.

MR. MEAD: Does that allow for some -- quite apart from the Zone K local requirement that is not going to change, does the fact that K is nested but export-constrained mean that some additional capacity can be located in K for purposes of meeting --

MS. MUKERJI: I'm not ensure nested concept fits within an export-constrained concept. If you are export constraining, why nest anything, explicitly recognizing the transmission limit? So this whole nested concept comes from this LCR concept.

So my difficulty is if you are going to do that for K, the 11 load zones which all have limited transmission, why don't you do it for all 11.

And then the question is how much do you procure for maybe 117 percent for all of the zones, and what the limits will be in the zones, so that's the issue that I'm struggling with and I'm sure that other people are struggling with. You can either take the LCR concept, which lends itself to the question of nesting or not nesting, and we decided not to nest K, or you could break it up into 11 zones in New York, 11 bubbles, export-constrained, and then we have to find out how much

we procure in each bubble, what are the transmission limits, and how much flows between the bubbles, which may or may not be what we have in the MARS program.

CHAIRMAN HENSLEY: It could be something in the middle where you don't do all 11, you just do some subset.

MS. MUKERJI: Then you have the difficulty why K and why not A and --

CHAIRMAN HENSLEY: I understand, I understand. I think we have a lot of interesting stuff but --

MS. MUKERJI: If you do K then as soon as you put K out, does K then clear in NYCA?

CHAIRMAN HENSLEY: I've got you, Rana, I've got you. We have the last half hour we wanted to let people from the audience also weigh in so --

MR. MEAD: I have one more big question I would like to put out there.

CHAIRMAN HENSLEY: One more big one.

MR. MEAD: Maybe it was Ms. Nelson, but somebody in ISO made the remark that Zone K and Zone J are currently nested within NYCA, unconstrained. And I'm having a difficult time understanding why, I understand what the tariff did, but apart from what the tariff requires, I'm having a difficulty understanding why it would be a good policy to treat Zone K differently with respect to its relationship to NYCA, versus with respect to its

relationship to G to J.

The issue came up in the deficiency letter and I believe that NYISO's answer was at least in part, if you ask, if you add -- well, because K is located within NYCA, then necessarily any additional capacity that you add to K will increase, improve the LOLE for NYCA. But, we shouldn't nest K within G to J because there is not very much reliability benefit that additional capacity in K can provide in G to J.

So I guess my question is, taking that last point, will additional capacity in K improve the LOLE in zones A to F?

MS. MUKERJI: A through F is not, you have to look at it by definition. A through K, all 11 zones are part of NYCA, because the IRM is based on a NYCA wide representation, if there is a violation in any of the 11 zones, there is a violation in NYCA.

So the whole probabilistic IRM setting is based on NYCA, so K is part of NYCA, because that's how we set the IRM.

Now then you come to the question of when you look at we had G-H separate and K separate before we did the new capacity zone, because each one of them had export limitations, and we didn't refer to them explicitly as export-constraints, we reflected that in the LCR. Then

when we did, when we included the new capacity zone the coupling was the East Pleasant Valley line, and then we had the serious determination of whether you nested with J, GHIJ, or you nested with K also.

And the reason we nested with J is if you build in J, and you can look at the physical reality of the system, there is 5000 plus megawatts connecting GHI to ConEdison, J. So anything you build in ConEdison can address a need in the Lower Hudson Valley, so it made sense to nest it with J. The K was more of a, was more of a question, and we debated in the stakeholder process and essentially then we said that if you retired capacity in the Lower Hudson Valley and build it in Long Island, you get a reliability violation.

And Mayer said that, you know, there are facts that Mayer stated might have caused liability violation is true, because GHI is short by itself. So if you retire stuff and put it in K it doesn't work its way back to GHI.

So that's why we said it doesn't make any sense to nest it, because if you nest it, then anything in the western, in the eastern tip of Long Island would be presumed to be helping the reliability issues in GHI, so that's why we didn't nest it.

MR. MEAD: But that same capacity cannot

possibly help reliability in H through F either, so if the inability of additional capacity in K to help the rest of the new capacity zone's reliability, why doesn't that same principle apply in the decision whether to nest K within --

MS. MUKERJI: Because it was already, you do it for the control area, you do reliabilities, you said the IRM. You are not sending our IRM from the G to K or G through H. The fact is since they are part of the IRM setting, and that's why I'm saying, two separate export-constrained zones, I have questions whether it synchs in NYCA or not. So the fact is, by definition K is part of NYCA, so it synchs into NYCA.

MR. MEAD: Well, the tariff says K is part of NYCA, I understand that the tariff says that, but I mean when you nest, you allow additional --

CHAIRMAN HENSLEY: Dave, I really do think we need to get to some of the audience.

MS. MUKERJI: 30 seconds. Physically that happens because 344 megawatts or whatever, each zone helps each other, and that's why it's part of NYCA. Now, you say then based on this fungibility test it doesn't significantly help any retirements in GHI, and we chose not to do it, but the reason it is not NYCA and not in GHI is because everything is in a part of NYCA.

(12:31 p.m. -- recess -- 12:40 p.m.)

CHAIRMAN HENSLEY: In case we don't get to anybody that needs to speak, we have the post technical conference comments due to by March 26th, and the Answers to those due by April 16th, so, we are going to entertain all comments in case someone doesn't get a chance. We are supposed to end at 1:00, but maybe we can go a few minutes over.

MR. YAFFE: Is it necessary that you are going to promulgate additional questions to respond to after this?

CHAIRMAN HENSLEY: I can't really answer whether or not the Commission would want to do that, but for now it's just limited to the two notices that we have issued and those questions. But feel free to expound on what you have heard today. I do want to allow time for the audience to weigh it.

MR. CLARKE: I wanted to comment on David's tough questions, but I can wait until after folks have a chance to weigh in, either way.

CHAIRMAN HENSLEY: Okay.

MR. VANSHAICK: So, just very quickly, to sum up kind of our position, we have said in data market reports that it would be good to model these transfer limits that are modeled in the IRM study, and to use that as the basis for allowing capacity, certain amounts of capacity to move

from one area to another. This would of course require you to you define LCR's for certain regions which, and there would be some nested, some not, but you know, the current framework where you have LCR's and you have an IRM and you have these reliability studies that are based on a loss of load expectation, it seems compatible with the notion of having more areas with these fixed transfer limits between areas.

And then probably at some point it's worth considering whether for areas like Long Island having something that's more of a sliding scale that allows some discounted value beyond what the apparent limit is for the -- beyond the point of fungibility.

CHAIRMAN HENSLEY: At some point being in time for the next demand curve reset?

MR. VANSHAICK: Hopefully it's part of the discussion before the next demand curve reset. I realize there's going to be some tradeoffs between what is feasible and what not, but --

CHAIRMAN HENSLEY: Just to understand where you are coming from.

MR. VANSHAICK: Yes, but it would allow you to get a better, more efficient distribution of capacity, so ultimately people are going to be asking for implementation costs, but this is multibillion dollar market, and it

probably, it's hard the imagine that we couldn't justify the cost of some of these enhancements over time.

So because if you lower raw capacity costs you are able to find a more efficient distribution of capacity, just one percent will give you a $20 to $40 million annual savings in the overall cost of maintaining reliability. So it seems to me that it's probably well worth the benefit to come up with a pretty robust solution.

CHAIRMAN HENSLEY: Okay. Folks in the audience can just raise their hand, I think maybe if anyone wants to speak. I see Mark Younger.

MR. YOUNGER: Yes, Mark Younger from Hudson Energy Economics. I would like to briefly address the broader issue that has come up with a couple times. Rana has said that if you are going to look at an export-constrained relationship for Long Island then you really ought to be looking at 11 zones, and Pallas just referenced something similar.

And Jesse, you had asked, well, if you don't have a deliverability constraint why is it worthwhile having different capacity zones. So one reason, and a critical reason is that our deliverability test doesn't capture all of the capacity that's allowed to be in the market. In particular, it doesn't represent special case resources in any manner. And so you could have a situation

where market prices between two areas should be separating because there is SDR in the capacity market, but because you are not counting SDR load reduction ability in your deliverability tests, your deliverability tests as you know, have some amount of headroom, and so you don't view that you need a new zone, so that's one reason.

Second reason is the deliverability test does not consider potential resources, short term ICAP imports from outside, new resources that might want to come in, the way the deliverability test addresses those items is it says, one, for the ICAP imports, if you want to be here, you have to make a very long term commitment, and if you create a deliverability problem we are going to put the cost on you rather than a multizone market approach that would say, go ahead and come in, you are going to dump in the New York zone that's right next to you right where your import is, if that means you cause a separation the effects would be that you get a slightly lower price as does the rest of that zone you are dumping into, the capacity price starts separating, the market-based approach for providing a signal rather than the deliverability which is more of a command and control approach.

And you really can't separate the reasons why you want multiple zones from the fact that we have this periodic deliverability tests that are a way of creating

zones.

One other benefit of having multiple zones is you could come up with a TCC equivalent for transmission capacity delivery benefit, and create a financial right, if somebody built transmission and, therefore, relieved the ability to move capacity from Zone X to Zone Y or Zone F to Zone G, you could give them in addition to the TCC rights they have today, you could give them a capacity deliverability financial right that would be part of their decision on whether to build the transmission. You can't do that in the existing market models that we have today.

And so those are a number of reasons why one might want to do an 11 zone system. I have some disagreement -- well, I would think there would need to be a very large discussion spread across a year or two before you ever went to that. I actually think the implementation would be quite simple, it just takes a simplified model run through the ISO's energy model with the demand curves represented as a price cap load curve, and then, you know, you have a point for Zone A, a point for Zone B, and all the generators would sell there, and then the transmission limits would determine whether the zones all cleared at the same price or where your price separation came from. It would not be that hard to actually implement, although they would have to create a simplified system market.

MR. FRANEY: Bart Franey from National Grid, and just a few comments. First of all, I think we are kind of mixing apples and oranges here because we are using a MARS simulation, which does a very good job at measuring what is being referred to as fungibility, but it actually meets what we have called load carrying capabilities, and what that means is just the ability of single megawatt capacity to reliably serve load. So MARS does a good job at that, it does a horrible job at identifying export constraints.

So that's why we have a deliverability test that uses load flows, because that measures the capability of the network, it's not designed to measure load carrying capability like MARS is.

So, getting back do the crux of the technical conference, I think as far as export-constrained tests go, we already have that, that's the deliverability test, maybe it needs to be done more frequently, but it should certainly be done with a load flow and not MARS.

The second issue of this fungibility test, if that's being used to identify whether a zone should be nested or not, I think that you have to look at the analysis, and what the ISO has represented is there is a significant difference that I think you were trying to tease out but it was missed, and that is that the supply condition on Long Island where this test was done was in

surplus, 105 percent.

So the load carrying capability in Long Island is very small because they don't need it, they have surplus. The load carrying capability for Zone J is one for one because they are deficient.

So I would say that if you, pardon my scribbles, but this curve is actually the same as the Zone J curve, it's just we are starting here at a deficiency point.

If you did nothing else to the LCR for K, J, GHI but changed the distribution, move capacity out of K, put it in GH and I, this curve would be extended all the way back here, and you would show way more than 300 megawatts maintaining .1. What you are, you are operating here on the K curve at 300, it's that point right there on the J curve.

The reason why we have all of these points is because they are deficient with the load carrying capability or the fungibility for J looks a lot more from GHI because they need it, they are short. If you make K artificially short you would see the load carrying capability or fungibility could be an order of magnitude higher.

So, I think two things is the analysis is partially done, maybe we need to do more analysis, and as far as export constraint, I think that's a different test,

you don't want to use MARS, you want to use deliverability.

CHAIRMAN HENSLEY: I want the make sure, is there anyone else from the audience?

Yes, sir.

MR. JOHNSON: Shawn Johnson from Entergy Energy. I just want to speak just a little bit from the developer's perspective to really soak it in, keeping in mind the focus of this is the end result of where the price signals we are sending for either build or reduction in supply for the market, and maybe that speaks a little bit to the fungibility aspect, so maybe that argues for the fungibility aspect.

I don't know that we are taking a position one way or the other, but if ultimately the result is the market to meet reliability needs us to build and develop on Long Island and that supports reliability for Lower Hudson Valley, then that's great and it should be set up that way.

On the flip side, keeping fungibility in mind is if that's what the incentive and the price signal on the market sends for us or someone, and someone builds in Long Island 500 megawatts thus lowering the clearing price by 500 megawatts worth of in the ultimately end auction, that will send a price signal as well, and that may be that those existing megawatts in Lower Hudson Valley and G through J today see a price signal of an uneconomic

retention and they need to leave the capacity market.

So if fungibility is saying that you can't take 500 megawatts on Long Island and it's not a than equal replacement of 500 megawatts in Lower Hudson Valley, then that might argue with the idea of leaving Long Island out, in that sense that you are now sending a price signal to build in an area and remove from another area that might not meet that need.

I guess that would be our $.02 on it, keeping in mind that the ultimate end in this is the price signals you are sending to the developers to either retain or enter in that capacity or where that needs to happen.

CHAIRMAN HENSLEY: Mayer.

DR. SASSON: Just a brief point to say that I agree with Mr. Franey, that the starting point of the analysis is not the same for J as for K, for the reasons that he cited, that J is at 86 percent, it's about 2000 megawatts short of being fully sustainable by itself, where K is at 104 percent and it's much closer to being fully sustainable by itself at 117 percent.

So that accounts for, as you said, the fact that you reach the curve very quickly in K and not in J, which is a resource to load issue, not a transmission export issue, and I think that's the point I think you were making, Bart, and that's the point I have been making all

morning, it's not a transmission export issue, it's a resource and load to load issue, and they are different in K than in J, and that's why you have the different graphs that we see today.

CHAIRMAN HENSLEY: David, I saw you were next.

MR. CLARKE: Great, I wanted to answer David's tough question essentially why should Zone K be nested within NYCA but not nested within a G through J zone. I want to kind of go through the way I think about this.

It really depends on where the resource inadequacy is located, and this is a recourse inadequacy question, it's a probabilistic question, using a MARS-type resource adequacy analysis.

Assuming that G through K zone is using all available upstream capacity, power flows from west to east and north to south, so assuming that you are getting as much support as you can from the upstream zone, where does the next piece of capacity have to come from to meet a resource inadequacy in a G through J zone? You're getting as much as you can from upstream, all of it has to come from Long Island, essentially.

So all the draws that you are taking to figure out whether or not you can use Long Island capacity to serve inadequacy in G through J, all of those draws would be subject to the exit constraints from Long Island, the

amounts that you can move out of Long Island. If you add new capacity, if you add extra capacity on Long Island doesn't help a whole lot in making that a whole lot better if you are already above the exit constraint for G through J.

But what happens when you have a resource inadequacy issue in A through F, an upstream resource inadequacy? You have different options for addressing that, you have G through J capacity, you have K capacity. So when you are doing your draws, remember that three-quarters of the capacity in the G through K zone is in G through J, and one quarter is in Long Island.

So if are doing all the draws that you have, and there is hundreds of units in that region, so when you are doing all of the draws there is a lot of ways that you can serve an A through F need from capacity anywhere from G through K that do not hit the resource constraint, the exit constraint. It's not the case when you are trying to address a resource inadequacy in the G through J zone.

I can give you an example, let's say of a 250 megawatt example, so for example if you have 250 megawatts that is inadequate in Zones A through F, you could address that with 200 megawatt sufficiency or surplus in G through J and a 50 megawatt surplus in Long Island wouldn't hit a 250 megawatt exit constraint, 100 megawatts in G through J

and 150 megawatts on Long Island, it wouldn't hit the constraint, so there's a lot of draws you could take that would not hit the constraint.

Now, likewise let's say you had a 250 megawatt deficiency in G through J, you would then -- in the 250 megawatt exit limit, you have got to get it all, and it's limited coming from A through F, you have got it to A through K, and so you would hit the constraint.

So I think that's the difference between why you would consider Long Island nested in the NYCA zone and not consider it nested within a G through J, not consider nesting it within the G through J zone.

MR. MEAD: I'm going to guess that capacity in A through F is not fungible with capacity in K.

MR. CLARKE: That's correct.

MR. MEAD: Okay. So despite the fact that A to F capacity is not fungible with K, why is it that -- and you have also concluded that capacity above a certain small amount in G to J is not fungible with K, why is the lack of fungibility between G to J and K dispositive of making K a nested zone within that new capacity zone, but the lack of fungibility between A to F and K is irrelevant for purposes of making K nested within NYCA?

MR. CLARKE: K can serve many of the resource inadequacies in A through F.

MR. MEAD: But if we add -- I thought the whole point here was if we add -- the definition of fungibility, if we add additional capacity in K, will that -- and reduce it in the rest of the zone, in this particular case A to F, will the LOLE stay the same? If the answer is no, then the capacity is not fungible. And I, you know, since the only way to get capacity from K to A to F is through G to J --

MR. CLARKE: Let me go through my example. Let's say you put an extra 50 megawatts on Long Island, and we are in the circumstance where A through F has a 250 megawatt exit limit and 250 megawatts of inadequacy in A through F. Now, I have posited a case where you had 200 megawatts in G through J and 50 megawatts on Long Island. Now we are saying, okay, instead of 50 megawatts on Long Island we have added an additional 50 megawatts, so now we have 200 megawatts in G through J and 100 megawatts on Long Island, that still does not hit the Long Island exit constraint.

The other case that I posited was the 100 megawatts in G through J and 150 on Long Island, you add a 50, it's 100 in G through J and 200 on Long Island, that still doesn't hit the exit constraint. So adding capacity on Long Island doesn't necessarily, it's a probability question, and adding capacity on Long Island does not necessarily impact the limit, it's much less likely if you

are drawing from all the capacity in the G through K zone that you are going to get the Long Island requirement, even if you have added extra capacity on Long Island.

MR. MEAD: Why is there no exit limit in looking at capacity from A to F and K, but there is an exit limit with capacity from G to J to K?

MR. CLARKE: There is an exit limit, whether implicit, and if you ask the NYISO to do the same fungibility analysis that they have already done for GHI and K, it is likely -- and instead do it for instance F and K, it is likely that you would get a very similar result to the one they already got in their fungibility analysis, and it is a realistic question of whether there should be a maximum limit on the amount of capacity that can be located on Long Island and count towards anything.

DR. SASSON: Are you asking the question, David, why is the transfer capability higher in one direction than the other?

CHAIRMAN HENSLEY: I think Mr. Younger answered your question.

MR. MEAD: Yes, I think he did.

CHAIRMAN HENSLEY: I think since we are past the timeline, but Pallas and then did you want to?

MR. YAFFE: I would like to make just one comment, and it's more about nomenclature. When we walked

in it wasn't entirely clear to some of us who are deeply involved in doing simulations exactly what the implications of an exit-constrained zone is.

MR. MEAD: Export.

MR. YAFFE: If we are talking about using it as a modeling concept and letting the market result be whatever it is, as is roughly the case now, if I can grossly generalize where the modeling is done to create the IRM to determine the local capacity requirements based on the simulations to meet reliability, and the markets clear according to the demand curve, however they clear, but that's a separate, that's a separate mechanism, then let's make sure that going forward on trying to define, whether to require consideration of an export-constrained zone or not would be very clear whether we are talking about simply do that for modeling or whether there are going to be commercial consequences, because if the two get mixed up, then from Long Island's perspective, not -- with due regard to my friend from Central Hudson, not all of the generation is controlled by the Long Island Power Authority, and there are export limits and the question gets to be who gets to bid into the market and what.

So I think I just lay out that caution going forward.

CHAIRMAN HENSLEY: I think since this is a Zone

K conference it seems appropriate to end on Long Island and we will look forward to your comments. Thank you.

(Whereupon, at 1:04 p.m., the meeting was concluded.)