NASA Artemis II Wet Dress Rehearsal 2 Press Conference Transcript

Date: February 2025 **Location:** NASA's Kennedy Space Center, Launch Pad 39B **Moderator:** Megan Cruz, NASA Public Affairs

Panelists:

- **Lori Glaze** — NASA's Moon to Mars Program Manager
- **Charlie Blackwell-Thompson** — Artemis Launch Director
- **John Honeycutt** — Chair, Artemis II Mission Management Team

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Opening Remarks

MEGAN CRUZ: Welcome to NASA's Kennedy Space Center, where we are starting today with this gorgeous view of Launch Pad 39B and, on the pad, NASA's Space Launch System rocket and Orion spacecraft. NASA is targeting next month for its earliest opportunities to launch Artemis II — four astronauts on a journey around the moon for the first time in more than 50 years.

Good morning, and thank you for joining us today. I'm NASA's Megan Cruz, and you are watching a press conference to discuss this week's wet dress rehearsal. The Artemis II launch team rehearsed fueling the rocket again ahead of launch, and to discuss how it went and the road ahead, we have this distinguished panel for you today.

We have Lori Glaze, NASA's Moon to Mars Program Manager. Next to Lori, Charlie Blackwell-Thompson, Artemis Launch Director. And then finally, John Honeycutt, Chair of the Artemis II Mission Management Team. Thank you all for being here. We are going to start with some opening remarks from each of them, and then we will go to your questions. Lori, why don't you go ahead and kick us off.

LORI GLAZE: Thank you, Megan. It's been just a little under three weeks since we met to discuss Wet Dress number one. I want to thank everybody who's here in the room and who's dialed in online to listen to the press briefing today. We're very excited to talk to you about how the wet dress went yesterday.

I want to start first by thanking our incredible team across all parts of the Artemis II program that have gotten us to this point. They have done an enormous amount of work. Over the last three weeks — a little less than three weeks — a lot of work went into learning from Wet Dress one, putting in place fixes to things like the seals at the quick disconnect interface, doing some replacement on filters on the ground system side, and thinking through various aspects of how we implement the wet dress rehearsal. I can say for the most part, those fixes all performed pretty well yesterday, and Charlie's going to speak to that in a lot more detail. That was really exciting.

If you followed our progress yesterday, we were able to fully tank the SLS rocket within the planned timeline. We demonstrated our crew module closeout activities with the closeout crew on timeline, and we also successfully demonstrated the launch countdown. Charlie will talk in a lot more detail. We did navigate through a few issues — you'll hear a little bit about some of those — but overall the countdown went very, very smoothly.

We do have work to go to get our systems ready for launch. We've already begun the data reviews from yesterday's wet dress, and there's some other work that needs to be done out at the pad.

One thing I do want to say here today is that following that successful wet dress yesterday, **we're now targeting March 6th as our earliest launch attempt**. I want to caveat that — I want to be open and transparent with all of you — there is still pending work. A lot of forward work remains, including the post-wet dress analyses. We have some significant work to be completed out at the pad, which Charlie will talk about in more detail. We also have a multi-day flight readiness review coming up later next week. We need to successfully navigate all of those, but assuming that happens, it puts us in a very good position to target March 6th.

We were fortunate yesterday to have several of our crew members present for the wet dress rehearsal. I was able to speak with Reid Wiseman, Christina Koch, and Jeremy Hansen. They're all very excited. I was glad they could be here. They are really building anticipation for a potential launch in March, and they go into quarantine this afternoon, this evening.

The excitement for Artemis II is really starting to build. We can really start to feel it — it's coming. I really can't wait to welcome you all back here to Kennedy Space Center when we're ready to launch and fly this mission. Every night I look up at the moon and I get really excited because I can really feel she's calling us, and we're ready. Thank you. I'm going to hand it over to Charlie.

CHARLIE BLACKWELL-THOMPSON: Thanks, Lori. Since we were here a little over two weeks ago, there's been a lot of work out at the pad. As you know, we had some leaks in our ground-to-flight interface from Wet Dress one. We went in and changed both the eight-inch and the four-inch seal in that plate cavity. I'm happy to report that yesterday both of those interfaces were rock solid. We saw maybe 1% or less in that eight-inch line interface — actually, it was a little less than that — and then about 1.5% in the four-inch. Really no leakage to speak of, so it performed very well. The work that the team did paid off.

We did a hydrogen integrity test before we went back to wet dress. We felt that was important to get some understanding of that interface before we brought the entire vehicle up and tanked both stages and both commodities. We got some data out of that which helped us pinpoint that the leak source was primarily from the eight-inch seal. We changed both seals because we were already in there, and it just made sense.

Yesterday we got into tanking. We gave the go for tanking at 9:28 in the morning, so we were a little bit ahead of schedule. The call to stations was the night before — powered up the vehicle elements, got everything configured, got into all of our preps. We were ready for load yesterday morning.

We did make a couple of changes to our wet dress countdown from Wet Dress number one. We added extra time into the hold before tanking and the hold after tanking. We did that in the event we ran into an issue, since it

takes about 20 to 30 minutes to run the contingency scenario where we let the QD warm up and refill. We wanted extra time. Thankfully, we didn't need it for that, but overall the tanking went through — it was really quiet and went well.

We did experience an issue with our communications system. That was probably the most exciting thing that happened during the tanking scenario, but it wasn't related to the loading of cryogenic commodities.

We didn't have the flight crew participating; we had them observing but not actively participating in the test. In other words, they didn't go out to the pad. But we did send the closeout crew out to the pad, and they went through their normal closeout timeline of the Orion crew module — the last hatch and the white room. All of that went per the timelines.

Then we got into our terminal part of the count. We resumed from our count at 8:32. We were targeting an 8:30 T-0 initially — we were a little bit behind that coming out, but really close to the opening of the window.

We had a planned hold to demonstrate the three-minute MPS hold constraint. We have never done that before. We did that yesterday and were successful. We held the clock at T-minus 1:30 for the three minutes, picked up — actually went a little bit over the three minutes — picked up and counted down, then had a planned cutoff. We went through our recycle with the flight hardware, with the cryogenically fueled vehicle — again, first time we've ever done that — validating our timelines. We expected it to take about an hour or a little over. We did it in 57 minutes. Very pleased with how that all went.

Retargeting to a second T-0, we picked up the count again at T-minus 10 minutes and counted down. We had no holds — no planned holds and nothing held us up in terminal count. We went down and had a cutoff at 29 seconds, which concluded the terminal part of the count.

Then we got back into our recycle. This time, instead of retargeting to T-0, we got into our drain. I'm happy to report that through those two different targets of T-0, when we wrapped all that up, **we still had launch window remaining**. Very successful day. Very proud of this team and all that they accomplished to get us to yesterday and then to go execute with such precision. With that I'll hand it over to John.

JOHN HONEYCUTT: Thank you, Charlie. Obviously yesterday was really a good day for us. I thought the test went extremely well. The entire team really remained focused and vigilant throughout. That includes the MMT. When we did the test three weeks ago, the hardware was talking to us, so we listened. As Charlie mentioned, the remediation activities we took turned out really well. It was just another opportunity to wring out the system and validate and verify that we've got a good system in place before we put crew on the launch vehicle to go fly.

I had a little bit of time to reflect on the launch team and the MMT throughout the day, and I really felt like we've all gotten to a place where we want to be relative to how sharp we are and how we operate. Given our launch frequency, we have to work really hard through training activities for all of us to stay on edge. Teams are off looking at the data — I met with some of them this morning. So far, we don't have any indications of anything that we're worried about, but we're just getting started. We'll go through that and see what the teams come up with and address those as needed. But overall, it was a good day for us. Megan, back to you.

MEGAN CRUZ: Thank you. It's really great to see how we learned from Wet Dress one and had a successful Wet Dress two. We are now going to invite reporters here in person as well as over the phone to ask their questions.

Questions and Answers

Milestones Before March 6th

MARCIA DUNN, Associated Press: To meet a March 6th launch attempt, when would the flight readiness review need to be held? What other milestones between now and then do you have to hit in order to make that first date in March?

LORI GLAZE: I'll speak to the programmatic part, then pass it over to Charlie for the big technical milestones. The flight readiness review is certainly a big one. It is targeted for the end of next week. That should be in plenty of time prior to launch to go through that certification of flight readiness. It is going to be an extensive and detailed review. We are going to comb over every aspect of this system, and we'll go through that with our Associate Administrator, Amit. I expect our administrator will be paying very close attention as well as we go through that certification process.

At launch minus two days, we hand over responsibility to John Honeycutt as the MMT chair as we prepare for launch readiness.

Regarding the crew — they will go into what we're calling a soft quarantine at Johnson Space Center later today. Then at probably around L-minus five days, or possibly a little earlier, they would transition here to Kennedy Space Center to continue their quarantine up until launch. I'm going to pass it to Charlie for the big technical milestones.

CHARLIE BLACKWELL-THOMPSON: We really just have one big milestone left: contingency pad access. We got through our drain operations early this morning and got into inerting. We'll get back into the pad probably within the next hour or so — certainly by the end of first shift today. We're doing the preps for the lift, so we could be ready for that as soon as this evening.

Once we get the platforms lifted up — we have two of them, one that provides access to the intertank and to the booster, and another that provides access just to the boosters — we'll establish access in those volumes and do the FTS retest. That involves disconnecting ordnance, doing the retest, reconnecting ordnance, and closing out those volumes. It's not a short 12-hour job — it spans several days. But that's really the big thing we have left to do before launch.

Getting through this wet dress was an important milestone. There's other work — we'll continue with late-stage and final preparations of the crew module, and we have some lessons learned from yesterday to address. But in terms of the big work remaining, it really is the contingency pad access and the FTS retest.

Transparency Concerns and Seal Details

BILL HARWOOD, CBS: Charlie, you mentioned the mini tanking — the hydrogen integrity test. I think I'm speaking for a lot of reporters: we would not have known that was going on if we didn't ask somebody, which I don't understand. There's a lot of interest in all of this, and I don't understand why information is so hard to come by. PAO doesn't have permission to tell us things. That's number one.

Secondly, the seals you mentioned — none of us have ever seen a picture or a drawing. We don't know where they are in the tail service mast or how it butts up against the rocket. It really helps to have some detail. It's not ITAR — you need a picture, some kind of description. So where are the seals?

CHARLIE BLACKWELL-THOMPSON: I'll get you a picture.

[Laughter]

So you have two different lines that go into the plate that forms the interface between the flight vehicle and the ground. Those plates come together, and there are two — if you're looking at that live shot at the pad, you'll see two hoses that come off the back of that plate. Two flex hoses: one is eight-inch, for your fill and drain; the other is four-inch, for your bleed. Inside that plate cavity, there's a seal that goes around where that interface mates together. Pretty simple look — a seal.

What we did is change both of those out. In terms of findings, we didn't have any significant findings when we went into the cavity. It wasn't like we saw something with a significant blemish on the seal and thought, "This is absolutely the root cause." But the team worked through the data. What we did find was that after we removed the seal, there was a little bit of moisture in that eight-inch area. I'm not entirely sure where it came from, but we found some moisture there. When you get cryogenic temperatures going through, you can have some freezing, and that can cause an issue. We also found a few scratches on the four-inch, which we easily buffed out. They weren't indicative of the kind of leak we saw during Wet Dress number one.

When we closed up that cavity, we didn't have one thing we could point to and say, "This was absolutely it." We had a number of contributing factors. But certainly, changing out the seals addressed the problem because we had absolutely incredible performance yesterday.

BILL HARWOOD: Just real quick — during pressurization in the last few minutes, when you press the tank and the leak rate shot up during WDR one, how did it do this time?

CHARLIE BLACKWELL-THOMPSON: The maximum leak rate — let me get that for you, because I knew you would ask — was about 1.6%, with the highest at 1.5%. That's really pretty impressive, because if you recall, during Artemis I, even on our launch attempt, we saw about 6% in that cavity.

Leak Rate Comparison and Staying Sharp for Artemis III

WILL ROBINSON-SMITH, Spaceflight Now: To juxtapose the leak rate, Charlie — I know the limit for WDR one was 16%, but can you say what the maximum you actually saw was, especially during tank pressurization during the terminal count?

And to John Honeycutt, in your prepared remarks you mentioned working hard through training activities to stay sharp relative to launch frequency. Looking forward to Artemis III, how are you working to mitigate that gap? What sorts of activities are you doing to keep those skills sharp? And how soon can we expect to hear about crew training for Artemis III?

JOHN HONEYCUTT: On staying sharp — and I'll put words in Charlie's mouth; she does the same thing with her launch team — her forefathers that came before her were big on being vigilant about testing and staying sharp. I've adapted that same philosophy for the MMT, and I know we'll continue to do that after this mission as we approach Artemis III.

LORI GLAZE: Even the team dynamic and how the team was working together yesterday — there were some improvements over Wet Dress one and some of the prior trainings. They're really coming together. We've actually made some changes in how the MMT works, its structure, and by phase of the mission. I think there's a lot of lessons we can take forward to Artemis III, which is going to be a complex mission with multiple phases. Thinking about how we can make the MMT the most effective at making good, well-informed decisions in a quick timeframe — taking advantage of the technical depth on our bench — there are a lot of lessons we've learned that we can carry forward.

Regarding an Artemis III crew — there's still a lot that has to happen before we're ready to select a specific crew. General training is ongoing and can happen before we pick that crew, but we won't pick the crew until we have the specific mission operations lined out and can be assured we're picking the right crew for the right mission.

Redesigning the Interface for Artemis III and Future Launch Windows

IRENE KLOTZ: The administrator had written something about redesigning this interface for Artemis III. Do you think that's necessary, or do you think you now have this leak issue handled for future missions? Also, could you discuss the plan for launch options beyond early March? From what you've told us before, the early April window would not be available due to battery checkouts, and I've been trying for a month to get the rest of the window that opens April 30th.

JOHN HONEYCUTT: I'll take the QD part. Last time we got together, I told you about how tricky hydrogen is — small molecule, very energetic, and it likes to find leak paths. We've seen that throughout history. This team has worked very hard since Artemis I and knew we had work to do. I can promise you they addressed everything they could, yet we still ran into this. The team still has some open legs on their fault tree that they've been working, but they got some good data this round. We'll have to see where that drives them.

If you recall on Artemis I, we did the same thing — changed the seals at the pad and were successful. Here we are again, three weeks later, changed the seals and were successful. The hardware is talking to us. I don't want to get ahead of the team; they've got some theories about what's going on, and we'll let them drive the closure. But I do know the administrator wants to make this leak-proof, and I think we're on a good path.

Setting the Launch Date

KEN CHANG, New York Times: When would you set a launch date? Would that be after the flight readiness review?

LORI GLAZE: I think we are going to target the sixth. It's pending the successful work at the pad and the successful certification of flight readiness, which we anticipate at the end of next week. If something happens that pushes us off the sixth based on the experience we're having over the next week or so, we will certainly communicate that. We'll be posting regular updates on the contingency pad access and the flight termination systems work in the booster and intertank area of the core stage. If something looks like it could threaten the sixth, we will let everyone know. But for right now, that's the direction we're headed.

There was also the question about later launch periods — in particular, Launch Period 20 that opens on April 30th and beyond. We'll take that seriously and take a look. There's still a lot of analysis that has to go into those. The three launch periods we released are the ones most closely analyzed, where we understand the constraints: thermal state of Orion, eclipses, communications, the heat shield. As we refine and sharpen those analyses, we'll make the additional periods available. But if we're lucky, maybe we won't need those.

Weather Impact on Systems

MICAH MAIDENBERG, Wall Street Journal: Has the team conducted any analysis of the impact the weather may have had on the vehicles or ground systems, given some of the cold temperatures seen earlier?

CHARLIE BLACKWELL-THOMPSON: We do not believe the cold ambient temperatures had an effect on the performance of the cavity, because the ambient conditions are so much kinder than the cryogenic temperatures flowing through that interface. We did see during the wet dress that some of our systems out at the pad had some thermal effects — certain pneumatic systems that you set up based on ambient conditions. As we saw fluctuations in temperature, some of those needed adjustments. But in terms of performance of that interface, we do not believe it was an ambient condition-related issue.

Seal and Filter Replacements Going Forward

KEN KRAMER, Space Up Close: Congratulations — it was spectacular. Regarding the seals and the filters: you replaced them two times. Do you need or would you consider replacing them again, or are you going to use the seals and filters in place now?

Also, I've asked for an Artemis II reentry trajectory. If you could make that available with some detail on why it's different from Artemis I — you're not doing the skip reentry — that would be extremely helpful.

JOHN HONEYCUTT: The seals and the filter are two separate issues. We ran into the filter problem during the confidence test. I'll let Charlie describe that.

Right now, if we ran into a challenge on the seals, we would look at the data and make a decision about next steps. But I have a pretty high level of confidence in the configuration we're in right now. It's out at the pad, it's going to be there until we go fly, and very little can change that configuration.

CHARLIE BLACKWELL-THOMPSON: I agree with John — there's no plan to change the seals. We had great performance yesterday and no reason to revisit them.

In terms of the filter — it's on the skid on the mobile launcher. During the confidence test, we saw a delta-P across that filter that we didn't expect, right around the time we were transitioning to fast fill. We had to wait a couple of days for it to warm up to the right temperatures, because the last thing you want to do in a cryo system is introduce moisture. We went in, pulled the filter out, and found it wasn't clogged — no debris. It was likely some air that got ingested into the system somewhere and froze. We purged it out, put in a brand new filter, continued our purges, and had really good performance yesterday. We have no plan to go in and touch that again. One of the ways you can actually cause problems in cryo systems is by opening them up. They're working — it's safer to keep them buttoned up.

JOHN HONEYCUTT: I want to give kudos — the technical community works closely together. Some folks from other programs stepped in and shared their learnings relative to frozen nitrogen or frozen air in their filters. They had seen it before, and they provided valuable data to help drive this to closure.

On the Artemis II trajectory question — thank you for the comment. We'll see what we can do getting you more detailed information. I wouldn't say the Artemis II trajectory is a "better" trajectory than Artemis I. It's different and uniquely designed specifically for the Orion heat shield capabilities we have for Artemis II. It's also uniquely designed based on this free-return trajectory. It's not an entry profile we would use for Artemis III, which will be in orbit around the moon and then coming back to Earth.

Because we're on this free return, we can use this specific trajectory to manage heat loads on the Artemis II heat shield. Based on all the work done since Artemis I, we understand what we expect the performance of that heat shield to be. We will make changes to the heat shield for Artemis III — in fact, it's already built and sitting in the O&C building right now. This is a unique trajectory specific to this mission. We won't use this type of trajectory again once we have the more capable heat shield.

Emotions and Other March Launch Dates

MEGAN MORIARTY, WESH 2: Charlie, what kind of emotions were you feeling at 10:16 p.m. last night? How confident are you for a March launch date? And besides March 6th, what are some of the other dates we could see?

CHARLIE BLACKWELL-THOMPSON: How did I feel last night? I felt great. The team had worked really hard. We had some challenges from Artemis I, and our SLS chief engineer John Blevins often says, "You have to earn your right to fly." I felt like last night was a big step in us earning our right to fly.

Very proud of the team, because they continue to work through the challenges — whether it was in the integrity test or the wet dress. All of this really prepares you to fly. The proficiency and execution, the timelines, the way

they matured the procedures — all of that was reflected last night. It's a testament to the work the team did.

How do I feel about March 6th? As Lori said, we have to get through the flight readiness review and work ahead of us. But as I told our team during the pre-test briefing, we had two big jobs ahead of us. One was a successful wet dress meeting our test objectives. During Artemis I, we left a few of those on the table and still made a successful run at launch. But last night we demonstrated them all. That gives me great confidence going into launch countdown — relative to how to load the vehicle, the performance of the seals, the performance of the team, and things you might see in terminal count.

The other work ahead is the contingency pad access. That's a first-time operation at the pad — a new capability we developed for Artemis II specifically to provide a retest of the flight termination system at the pad. For Artemis I, we rolled back to the VAB for that. Now we have two access trusses that install on the mobile launcher, providing temporary access to those compartments to access the ordnance and retest it. I'll have a much better answer on how that goes once we get into the work, but that's really the last remaining thing other than buttoning everything up and getting into final configuration for launch.

LORI GLAZE: Our launch window goes through the 11th — so the 6th, 7th, 8th, 9th, and 11th.

I also want to stress: this continues to be a flight test. This is our second time flying the SLS and Orion systems, the first time with crew, the first time with the environmental control systems active, the first time with the flight termination systems active to support crew. I don't want anybody to lose sight of the fact that this is a flight test. The entire mission, we will continue to learn. That's the whole point.

Closeout Crew Activities and Changes from WDR 1 to WDR 2

TJ MASCARA, Epoch Times: Can you elaborate on what work the closeout crew still has to do and the changes made from Wet Dress one to Wet Dress two?

CHARLIE BLACKWELL-THOMPSON: We deployed the closeout crew to the pad yesterday to demonstrate the closeout of the Orion crew module and all our procedures. I wouldn't say we had any significant changes in the plans, other than some minor things we wanted to address.

One simple example: the elevators at the 274-foot level have blast doors. Those doors were closed when the closeout crew arrived at the pad during Wet Dress one. Normally they're left open so you can walk right out on the 274. That held us up for a few minutes while they reconfigured. It's a simple thing, but those simple things on launch day can cost you minutes that matter.

The closeout crew performed amazingly. They deployed to the pad, were right on their timelines, and we didn't have any significant issues. We do plan to do one more demo before flight because, given our launch rate, there isn't a full trainer anywhere that gives you the crew module hatch, the last hatch, and the white room. We get that at the pad with the flight hardware. So we intend to do one more closeout demo to refine our timelines and look at it one more time. But I don't envision any significant changes. The team did great yesterday.

Artemis III Crew Selection and Public Outreach

MARCIA SMITH, Space Policy Online: Lori, you mentioned not picking the Artemis III crew until you had the right crew for the right mission. Could you elaborate? Does that reflect questions about which human landing system you'll be using? And for Artemis II — what is NASA's strategy for getting the word out to the public? I'm still surprised at how many people don't even know we're going back to the moon.

LORI GLAZE: On the first question — yes. As you know, we have been thinking over the last several months about introducing a more competitive nature in getting our crew to the lunar surface. We're looking at potentially having either the Starship or the Blue Origin landing capability. That will make a difference in training. And as we refine the work we want to do on the lunar surface, that will define exactly what types of capabilities we need in that crew. I would anticipate over the next many months or year or so, starting to really refine what that will look like. Stay tuned.

On getting the word out — I agree, we need to start. I'm going to rely on you in the press to help us a lot in getting the news and the story out, and our PAO folks as well. Hopefully, by leaning in harder on when we really anticipate our ability to launch — hopefully in March — that helps a lot. It's not an ambiguous time in the future anymore. We've had this successful wet dress rehearsal. A lot of folks up to this point have said, "We watched Artemis I and it went significantly beyond when we first started talking about it." But this is really getting real, and it's time to get serious and start getting excited.

Leak Rate Consistency Throughout the Test

JEFF FOUST, SpaceNews: Was that low leak rate of about 1.5% constant throughout the test from fueling through the terminal countdown? Or were there points where it peaked? Does that provide any diagnostics about the root cause?

CHARLIE BLACKWELL-THOMPSON: No, it was not a constant leak rate. During our fill operations, the max was about 0.4% in fast fill — 0.4%. That is almost unheard of. Even in Artemis I, we did not see leak rates that low. In terminal count, during the first run-through we had 1.6% as the highest, and in our second it was 0.7%. It wasn't constant because during terminal count we go through something called pre-press, where pressurization pulses are being sent to pressurize the flight tank. So you see some fluctuation in the leak rate. But the numbers I gave were the maximums. Again, very good performance yesterday.

Seal Materials and Communications Issues

JACKIE WATTLES, CNN: Charlie, what's the difference between the seals you just put on versus the ones that were replaced? If I understand correctly, these warp with chill-down. What makes you confident these seals won't continue to warp on launch day?

And I know there was an indication you could work toward an earlier launch date than March 6th — March 3rd was kicked around. Can you discuss why you were able to evaluate launch dates that weren't previously

identified, and why you ultimately decided to stick with March 6th?

JOHN HONEYCUTT: On the seals — there's no difference. The seals are exactly the same; they're just newer. These seals are installed when we build the core stage up in the VAB. As you know, we're in the VAB for a pretty good while. Then we go through rollout, and we understand we have certain loads on the rocket as we roll to the pad. I'm not going to speculate further. We're going to let the teams go off and look at the data from yesterday, and see how that addresses things we might need to do differently moving forward — or maybe we just look at whether we do something different operationally.

LORI GLAZE: On the additional potential launch dates — there's an enormous amount of analysis that goes into determining which dates actually have appropriate launch windows we can use. We generally want something at least two hours in duration so we have a good chance of getting off that day, plus all the constraints: thermal control, eclipses for power, communications.

What happened with March 3rd is that the preliminary analysis was kind of on the edge. It was originally taken off the table. We already knew the 4th and 5th were not viable at all. But we started sharpening our pencils, trying to maximize the number of days. The Orion team went off and looked at not just the nominal and baseline cases, but all off-nominal scenarios — every potential scenario and how the spacecraft would still be able to keep our crew safe and return to Earth. That took an enormous amount of work. They did determine that the 3rd could have been a viable date, but the work we had ahead of us — particularly following Wet Dress one, considering the seal and filter replacements — it just didn't seem feasible. So we eliminated it.

I anticipate as we go through the systematic approach for assessing viable launch dates, we'll continue to refine those. We already have a rough cut for May and June and beyond. As we sharpen our pencils and get a better understanding, we'll make those available.

Seal Material Composition and Communications Path Forward

STEPHEN CLARK, Ars Technica: John, what are the seals made of? And was there any design change made between Artemis I and II? And Charlie, can you go over the comms issue and the booster avionics issue during the terminal count — what's the path forward on resolving those?

JOHN HONEYCUTT: It's a metallic ring that fits between the two interfaces, with Teflon sealing material built up on it. It's a complex geometry — it's got a spring-assist feature all around the seal. The four-inch seal is actually a pressure-assisted seal. But no, there's been no change since Artemis I in the design.

Communications Issue Details

JOEY ROULETTE, Reuters: Can you tell us more about the communications issue that was mentioned?

CHARLIE BLACKWELL-THOMPSON: We did experience a communications issue yesterday. We were able to track it down to a network configuration issue, and we've taken corrective actions to ensure it doesn't happen again.

One thing I'll also say is that while it wasn't planned, we did go through a contingency procedure that we run in the event of a loss of communications. We implemented that yesterday and it worked great. The only slight holdup was that when we encountered the comm issue, it was just as we were getting ready to take hydrogen from slow to fast fill. I asked the team to hold up — I didn't want to go to fast fill until we had stable communications, because in the event something were to happen, I wanted to make sure we could communicate across the team.

We do have a contingency plan that involves test nets on our radios. We deployed those yesterday in the firing room and were able to keep communication with our team while the network team isolated the problem and got us back to stable.

NICOLE, Canadian Broadcasting Corporation: You seem pretty confident this won't creep up again. This also occurred during the first attempt with Artemis I. Had you changed anything since then?

CHARLIE BLACKWELL-THOMPSON: I do not recall any issues like this with the communication system during Artemis I. We had a different comm system during Artemis I than the one we have in place today.

MMT Readiness

AUDIENCE MEMBER, National Space Society: John, at the pre-rollout press conference, you mentioned the enormous responsibility of the MMT and that you're not going until you're ready. We've made a lot of progress. What will you be looking at specifically? Is anything keeping you up at night?

JOHN HONEYCUTT: We looked at it, and leadership agreed that at some point on this path we needed to do more to get ready. I feel like we have demonstrated a significant amount of improvement, to where I am almost happy — and I may not ever be happy, I don't know. But we have another SIM — a space SIM planned at JSC for the MMT on Monday. Then, knock on wood, we want to go fly as soon as we can in the launch window. But if something opens up, God forbid, I'll be looking at other things we can do to stay sharp.

Crew Reactions

TARIQ MALIK, Space.com: Charlie, you mentioned the Artemis II crew was observing during the fueling test. What were their reactions or input afterward?

CHARLIE BLACKWELL-THOMPSON: We were really lucky to have three of the four flight crew members in the firing room observing the test. I would say they were excited to be up there with the team and pretty pleased with all the results. I wouldn't want to put words in their mouth, but I think they were as happy or maybe happier than I was. And I was certainly thrilled.

JOHN HONEYCUTT: Reid Wiseman was in the MMT bubble with us. He's been tracking what this team is doing to improve, and he made the same observation that I made earlier today. He noted it to me after we

finished the test — he reflected on both the launch team and the MMT.

Broader Communications Concerns

ANDREA LEINFELDER, Houston Chronicle: I wanted to ask about the communications. There were blackouts during the first wet dress rehearsal, and an alert said it had been an ongoing issue. Is there a larger issue with the communications? And did going through the contingency plan yesterday provide confidence it would work on launch day?

CHARLIE BLACKWELL-THOMPSON: We did have a comm issue during Wet Dress one. Like many communication issues, they can happen for a lot of different reasons, and not all are the same. The team has been working diligently to determine the cause of each.

Some comm issues have been related to configuration between centers — where loops weren't connected the way we expected. That's why we do wet dress, so we can figure all this out and get the configuration and mapping correct for launch day. We've also had an issue on a prior test where we dropped out of duplex to simplex mode within the server — the comm worked fine, but the redundancy wasn't there.

Yesterday's issue was completely different. It wasn't within the voice comm system itself but in the network. Hopefully, as we've pinpointed each root cause and corrected them, we won't see this on launch day. We'll be putting operational controls in place — freezing our configuration once it's set and tested.

On the backup plan — because we had some issues previously, we wanted to make sure we had contingency procedures ready. We thought about what the next failure could be, how it might occur in the most dynamic state, and how we would address it. That's where the contingency plan came from. We had radios available in the firing room, people designated to distribute them, and we knew what channels to use. It was all in our procedures. While I hope not to execute that on launch day, I know it's available if we need it.

Booster Avionics Issue

CHARLIE BLACKWELL-THOMPSON: I want to go back, because between the multiple questions, I think this got missed. Someone asked about the issue that stopped us in terminal count.

We always plan to count down and hold at T-minus 1:30. We did not plan to have an issue, but we did. It was Booster Power 001, which looks at three measurements — two from the ground and one from the booster's onboard battery — making sure we have the right voltage to support the mission.

What happened is the flight measurement looked great and was solid. But we saw a delta between what the ground side was seeing and the flight side. We're going to look into that. It was no constraint to yesterday — we're not flying — so we knew we were in a good position to press on. But we will investigate why we saw that delta. Certainly, between the two, you want your flight measurement to be sound because that's the one you're going to fly with; the ground one gets left behind. We'll work that out.

MEGAN CRUZ: Thank you so much for that follow-up, Charlie. As you can see, we try to get to as many of you and your questions as possible. We do have to wrap up today's news conference now. Thank you for your questions, and thank you to Lori, Charlie, and John.

As you heard, we are going to target our first March opportunity — **March 6th** — pending any open work. Ahead of that attempt, we will of course host more briefings so you can stay up to date on our progress. Until then, everyone can learn more about this mission at NASA.gov.

Thank you, everyone, for your interest and your questions. Have a great rest of your day.