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"STS-115 POST LAUNCH PRESS CONFERENCE"

SPEAKERS:

Michael Griffin, Administrator, NASA
Bill Gerstenmaier, Associate Administrator
for Space Operations
LeRoy Cain, Mission Management Team
Mike Leinbach, Shuttle Launch Director

[Moderated by David Mould, NASA Public Affairs]

12:30 p.m. to 1:15 p.m., EST
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Kennedy Space Center

[TRANSCRIPT PREPARED FROM A WEBCAST RECORDING.]

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1 P R O C E E D I N G S

2 ADMINISTRATOR GRIFFIN: [In progress] -- and it
3 was a flawless count and a majestic launch, and it was
4 tough to get here. This vehicle had not flown since 2002
5 -- I think actually 2001. Right? This vehicle had not
6 flown in many years.

7 [Laughter.]

8 ADMINISTRATOR GRIFFIN: And not everything in the
9 count leading up to this day was easy, and in between, we
10 had to dodge tropical storms and lightning strikes and
11 things like that, but we got here, and it was just a
12 flawless day, and I'm proud to have any part of it.

13 MR. GERSTENMAIER: Thanks, Mike.

14 I would again like to echo your comments to the
15 Kennedy team and the folks around the country that put the
16 hardware together that got us into orbit. The team did an
17 awesome job. It wasn't easy getting here. They hung
18 together through a lot of adverse circumstances, and they
19 just were a real tribute to the professionalism that is
20 going to take us forward into assembly.

21 We now kind of hand off to the Space Station team
22 and the On Orbit team on the Shuttle side, and they have

1 got a very busy mission in front of them with the EVAs and
2 the activity on orbit as we return to assembly. That will
3 be an extremely challenging flight, the remainder of
4 Atlantis' flight here.

5 The teams are prepared, they are ready to
6 execute, and they are ready to go. I think they are
7 excited and ready and kind of have that
8 deer-in-the-headlight look as they see all of this assembly
9 stuff coming forward, and they are ready to go do their
10 job.

11 So, again, it is a great tribute to the Kennedy
12 team today, and thanks for all the work they have done
13 today.

14 MR. CAIN: Well, it is great to be here, and any
15 day we launch a Space Shuttle is a great day in my opinion.

16 The team just did a fabulous job today. I will
17 tell you that I was looking for trying to make some notes
18 about what I might talk to you about when I came over
19 today, but I told Mike, I brought my console notes, but
20 it's kind of on console, go for launch, launch, MECO, and
21 there is not a whole lot else in between there.

22 [Laughter.]

1 MR. CAIN: And so I would like to say, though,
2 that I am here representing the Mission Management Team,
3 and I am privileged to be able to chair that group of folks
4 in this particular phase of the mission. It is just an
5 outstanding group of individuals who represent an even
6 larger, outstanding, world-class team in my estimation.

7 So we had a very clean walk-through to countdown
8 today as we watched Mike and his team do all the work. We
9 really didn't have significant issues to work as the
10 Mission Management Team, and after we are finished here, I
11 will go back over to the firing room, and we will release
12 the Mission Management Team to go back to their home
13 centers, and I will hand over the baton to John Shannon and
14 he will chair the On Orbit portion. I will be very happy
15 and proud to do that. It is good to be here today.

16 Mike?

17 MR. LEINBACH: Thanks, LeRoy.

18 I am here representing Team Atlantis, a great set
19 of folks who have been working on this ship for almost
20 1,300 days in one state of preparation for flight or
21 another, and they finally got their reward today. It just
22 feels really good.

1 There were literally tears in the firing room.
2 It felt excellent to reward them with this launch today.

3 We also get to represent the payload processing
4 folks here at the Kennedy Space Center who have had the
5 P3/P4 truss here for over 6 years. So they are awfully
6 glad to have their piece of hardware on orbit now too.

7 The countdown itself went extremely smoothly,
8 which probably shouldn't be surprising, considering how
9 many times we've tried it.

10 [Laughter.]

11 MR. LEINBACH: And so normal program, no
12 problems, it was just really, really clean today. We were
13 trying to find stuff to talk about and couldn't. It was
14 just a great countdown. The team is rewarded. It is a
15 great Saturday afternoon in Florida and for the Space
16 Shuttle program and the Station program.

17 Thanks.

18 MODERATOR: Okay. We can go to questions now.
19 Please wait for the microphone to come around, and state
20 your name and affiliation. Let's try to limit our
21 questions to one, please, at least in the first round, so
22 we can give everybody a chance, and we will try to get all

1 of your questions in during the press conference, so we can
2 get these gentlemen back to work.

3 So we now can start back here in the middle,
4 please.

5 QUESTIONER: Good afternoon. Richard Luskham
6 from the Times of London.

7 The Shuttle went into or behind cloud fairly
8 quickly after the launch. Will that hinder any of the
9 camera views from anywhere? Does it make it harder to get
10 a clear view from all the cameras you have with the
11 Shuttle?

12 MR. CAIN: I will take that one.

13 It was a cloudy view, depending on where you were
14 standing or viewing from as a spectator, but we have so
15 many views that it really is not going to hinder us, and we
16 have on-board capability as well. So we have plenty of
17 looks at the vehicle going uphill, and we don't have any
18 concerns in that regard.

19 MODERATOR: Next. Second row.

20 QUESTIONER: Hi. Tom Costello with NBC News.

21 I know it is early, and we will ask you this in 4
22 or 5 hours, but, thus far, do you see anything that is of

1 any concern in terms of debris shedding?

2 MR. CAIN: I will take that one too.

3 In talking with the folks before I came over
4 here, the earliest indication that we have of any event in
5 the way of shedding debris going uphill was after 4 minutes
6 mission-lapsed time. I believe it was 4 minutes, 7
7 seconds, and there were no events of note before that.

8 I would caution you only that it's extremely
9 preliminary, but so far, we didn't see anything in the
10 region of highest concern, if you will, and the things that
11 folks did see in the very, very preliminary look was well
12 into the ascent phase where we really don't have debris
13 concerns, per se.

14 QUESTIONER: Can I just ask you to explain why?
15 Because it is not any longer in the gravitational pull that
16 it is of concern, is that right, when you are 4 minutes
17 into flight?

18 MR. CAIN: Well, essentially, yes. There is no
19 dynamic pressure. There is no way for the debris to create
20 a critical impact force, if you will.

21 ADMINISTRATOR GRIFFIN: To have a thread, there
22 has to be a relative velocity between the debris and the

1 orbiter, and if there is little to no wind, if you will,
2 then there is no way for the debris to pick up a
3 significant velocity relative to the orbiter, and it
4 doesn't matter anymore.

5 MODERATOR: Okay. Let's go to Seth, please.

6 QUESTIONER: Seth Borenstein, Associated Press.

7 I guess for LeRoy. It sounds like you have
8 another ice issue with the flash evaporator so often. Is
9 this of any concern? I mean, can you go through what you
10 are hearing and if there is any work around, or just not
11 bother?

12 MR. CAIN: You probably heard as Atlantis was
13 going uphill, there was an issue with the flash evaporator
14 system, the FES, and initially, they selected over to a
15 different heater string, and after that, then they cycled
16 the FES, and after cycling it, then it began to work
17 normally.

18 I talked to the folks back in Mission Control
19 before I came over, and the FES is operating nominally. We
20 believe what happened is due to some rain. We have had
21 some water or precipitation get into the ducting, and that
22 is not an uncommon thing. We have seen it happen before.

1 So we don't believe it is going to be of issue for the
2 mission.

3 MODERATOR: Let's go back along the wall here to
4 Todd, please.

5 QUESTIONER: Todd Halvorson of Florida Today for
6 Bill Gerstenmaier.

7 It has been a long hiatus in assembly, and I am
8 wondering how you feel about being on the precipice of
9 getting back to the Station and resuming assembly, and
10 whether you could characterize for us the challenges and
11 difficulties you anticipate in the years going forward.

12 MR. GERSTENMAIER: I guess I would just state it
13 this way. I am really excited about getting back to
14 assembly. I go over to the SSPF and I see all that
15 hardware that is ready to go fly and I talk to all the
16 folks that are over there that are processing that
17 hardware, getting it ready to go fly, and they are excited
18 and they are ready to go put this hardware together.

19 I can also tell you the EVA team that is going to
20 go work this on orbit, the two EVA teams, they are really
21 ready to go do these tasks. They have trained a lot in the
22 pools. They are excited about doing this.

1 The Mission Control Teams, both the Shuttle and
2 the Station Teams, are really ready. There is a lot of
3 ground-commanding that has to occur in concert with the
4 EVA, and they are excited and they are ready to go do their
5 activities.

6 So you train, you spend all your time, you get
7 ready, and now you finally get to go execute what you have
8 dedicated your life to, and there is nothing better than
9 the feeling of getting to execute what you have really
10 dedicated your life to, and that is what these folks are
11 starting to feel.

12 Today, we had Robby actually come to the LCC and
13 they recognized him as part of the truss processing team,
14 and I think that was especially appropriate. Not only it
15 had been a while for Atlantis to fly, but there has been a
16 lot of Space Station hardware that is also ready to fly.

17 I will also tell you, our partners are pretty
18 excited. I got four or five e-mails on the way over here
19 from partners around the world. No matter what time it is,
20 it seemed that they were all watching the Shuttle launch,
21 and they all sent me congratulations, congratulating us on
22 getting this launch off.

1 So it is not only the U.S. team that is excited
2 about getting back, but the international team is just as
3 excited as well.

4 MODERATOR: Okay. Let's keep going down the side
5 wall here with Traci down at the end, please.

6 QUESTIONER: Traci Watson, USA Today, again, for
7 Bill Gerstenmaier.

8 Can you talk about what it -- how relieved you
9 are, I guess, that you didn't have to go to the end of
10 September? I assume that is a benefit for you. If you
11 could address that. Thanks.

12 MR. GERSTENMAIER: Again, you know, I think the
13 way we kind of operate is we hope for the best, but we plan
14 for the worst. So we were ready for whatever came.

15 If we ended up after the Soyuz, we were ready to
16 go execute that, it wasn't what we desired, but we were
17 ready to go execute, and that was fine.

18 So the team has done an awesome job. They got us
19 here. The weather was good. The vehicle was good. The
20 preparation was good, and we launched. So it is nice, but
21 we were ready either way.

22 MODERATOR: Still on the wall with Mike Cabbage,

1 please.

2 QUESTIONER: Mike Cabbage with the Orlando
3 Sentinel for whoever would like to field it.

4 As you look ahead to the December launch, what,
5 if anything, do you plan to do as far as the ECO sensors
6 are concerned? Are you going to go off and look at what
7 appears to be a recurring problem? Are you going to try to
8 better understand what is going on? What, if anything, are
9 you going to do?

10 MR. CAIN: I will take that, Mike.

11 The first thing we will do is we will go back and
12 review the data from this tank, and then we will take the
13 next step toward our goal, which is to have a Launch Commit
14 Criteria to be go with three-of-four, without any kind of
15 deviation to detank and retank and that kind of thing.

16 This was an interim step in that process, and so
17 the next step will be another step in the direction of
18 getting to three-of-four in the Launch Commit Criteria. We
19 may be able to get there before that mission in December.
20 We just have to go look at the data and talk about it and
21 see what it means to us.

22 MODERATOR: Let's stay on the wall with Tariq,

1 please, and then up to Jay on the front.

2 QUESTIONER: Thank you. Tariq Malik with
3 Space.com and Spacenews.

4 I think for Bill. We have heard about how
5 challenging this mission is going to be, and it seems like
6 there are many events that have to go in sequence. We have
7 got the Mission, Progress, Soyuz, and then landing.

8 Can you kind of characterize that challenge, and
9 is it indicative of what the rest of the assembly with the
10 Station is going to be?

11 MR. GERSTENMAIER: I think it is pretty
12 indicative of what we are going to have in the future here.
13 The Shuttle is going to undock, and then we are going to
14 actually have the Soyuz launch before the Shuttle undocks.
15 Then in there, the Progress will also get undocked from the
16 Station. So, at some time, we will have the Progress
17 free-flying, we will have the Shuttle free-flying, and we
18 will have the Soyuz free-flying, as well as the Station.
19 So there is going to be a lot of spacecraft in orbit around
20 there to keep track of, and we will be doing the
21 practicing.

22 I think one thing that is neat is when you look

1 at this and you think ahead to some of the exploration
2 activities, when we are going to go pick up the lunar
3 activity and then eventually some of the Mars stuff, these
4 kind of skills of learning to operate multiple vehicles,
5 again, in space and do rendezvous and prox ops, they are
6 going to be critical for those activities.

7 So what an awesome training ground that this
8 sequence of events has given our flight controllers and our
9 designers to do, to practice for things that they are going
10 to have to do more routinely when we start doing lunar
11 missions and have to do rendezvous and have launches occur
12 in a certain amount of time. What a great training
13 opportunity this gives us for those exploration folks that
14 are coming on line. So we are looking forward to that
15 activity.

16 MODERATOR: Let's go to Jay Barbree on the front
17 row, please.

18 QUESTIONER: Actually, Tariq asked my question
19 there, to a certain extent, but now I assume that we are
20 all clear with Soyuz. There is no impact. You have full
21 mission, full extension, anything that you need --

22 MR. GERSTENMAIER: Yes.

1 QUESTIONER: -- for this flight.

2 Thank you.

3 MR. GERSTENMAIER: We are fine. The contingency
4 data is available, and if they are needed, we have got the
5 right flexibility to go do what we need to do on orbit. So
6 we have got everything we would have had done the previous
7 launch days, and we are there and ready to go do what we
8 need to go do and see how assembly goes.

9 QUESTIONER: Thanks.

10 MODERATOR: Okay. John Johnson on the front row,
11 please.

12 QUESTIONER: John Johnson, Los Angeles Times.

13 Bearing in mind the caveats that you mentioned
14 earlier, could you give a little more detail on what you
15 know so far? Is it one piece, more than one? When it
16 floated away, did it hit the orbiter? What did it do?

17 MR. CAIN: Unfortunately, I can't give you any
18 more detail than that because I didn't get a chance to view
19 the preliminary video myself. What I shared with you was
20 what was passed on to me from the experts, some of the
21 experts who did view it.

22 I believe, though, that Wayne Hale is going to

1 come talk to you all at 4:00 this afternoon, and he will
2 have those kind of details for you. It will be his great
3 pleasure to share all of that with you. I can tell you for
4 sure.

5 [Laughter.]

6 MODERATOR: Okay. Mark Carreau in the second
7 row, please.

8 QUESTIONER: Mark Carreau from the Houston
9 Chronicle.

10 Can you tell us what you had to work with on the
11 ECO sensors today, and also, on the fuel cell coolant loop,
12 what did you leave with, and how does the outlook look?

13 MR. CAIN: Okay. Sure, Mark. On the ECO
14 sensors, we really didn't have to work anything to day
15 because our pre-plan procedure included coming back the
16 second day, filling up the tank, and if the sensors behaved
17 as they had in the prior attempt or in any fashion where
18 the other three were still good, then we would be
19 go-to-launch, and for all the reasons that we discussed
20 yesterday and for all the reasons that we put in our
21 rationale for that case, and that's what we had.

22 We came back in today, and Mike's team filled up

1 the tank. The three sensors that were nominal yesterday
2 were nominal today.

3 Interestingly enough, the sensor that failed
4 yesterday, after we drained the tank, it was somewhere on
5 the order of 4-1/2 hours after that sensor was physically
6 uncovered, where it should have gone what we call "dry."
7 It took 4-1/2 hours for it to go dry. It did go dry, and
8 then when we retanked today, it went wet, and then it
9 followed the simulation commands, as it should.

10 So, today, it looked like it wasn't failed, but
11 in any case, we didn't have to work the issue because we
12 were within the bounds of the deviation that we had put
13 forward.

14 With respect to the fuel cell, the fuel cell
15 operated completely nominally throughout the countdown and
16 throughout the ascent portion, all the way up until through
17 the orbital maneuver system, OMS-2 burn that we did, and we
18 didn't have any issues with it. It is performing
19 marvelously on two phases of the H2 as well as the coolant
20 pump.

21 So, just as we discussed I think the last time we
22 were here with you, that fuel cell is working fine.

1 MODERATOR: Front row, Craig.

2 QUESTIONER: Thanks. Craig Covault with Aviation
3 Week for Mike Leinbach.

4 I know you are going to say it is what you do
5 here, but you might want to, from a people resources point
6 of view, just kind of quantify the amount of work that has
7 been done here in the last 2 weeks with other flows. This
8 may not be the toughest, but it was probably one of the
9 toughest. And then address how things maybe stack up for
10 December in terms of work-flow impact.

11 MR. LEINBACH: Sure. We have been in Launch
12 Countdown for over 13 days. So that is unusual, probably
13 the first time we have gone that long in Launch Count.

14 But I can tell you, based on what Atlantis has
15 gone through, it probably shouldn't surprise folks.
16 Atlantis has gone through a lot of modifications. It is a
17 great ship. It has had curve balls thrown at her time and
18 time again, not due to any fault of her own, and so the
19 team just rolls with the punches.

20 We felt good going into the count a couple of
21 weeks ago and dealt with the challenges put forth to us.
22 The team always had their heads up.

1 We had a banner in the firing room today, the
2 201st ET loading, both combined loading of hydrogen and
3 oxygen. So the team, even though we loaded the other day
4 and had to drain, came back and changed the banner to
5 "201." So they don't lose their sense of humor. They
6 don't lose the pride in their job. It is what we do for a
7 living, as you say, and it is what we love to do.

8 It is something that gets in your blood. I don't
9 know how to describe it. It is probably in all your bloods
10 too. It is just a fantastic feeling to work in this
11 program.

12 Atlantis is a fantastic ship. The team that got
13 rewarded today, there was one particular lady on the team,
14 Pat Lesley [ph], who has worked on Atlantis virtually her
15 whole career, well over 20 years on Atlantis alone. We
16 were able to recognize her today because she is essentially
17 the grandmother of Atlantis, and she will probably kick me
18 for saying that.

19 [Laughter.]

20 MR. LEINBACH: We all know and love Pat, but it
21 is that type of feeling. It is that type of kinship that
22 we develop here. It is hard to describe. It is just a

1 wonderful feeling, and I get to sit up here and tell you
2 all about it. I don't do a very good job of it. I wish
3 you could go over and talk to the folks in the OPF, the
4 techs and the engineers and the quality and the safety, all
5 the people that work on these ships because they are so
6 proud of what they do and roll with the punches when we get
7 hit, and that is what I feel we have done these last 13
8 days.

9 QUESTIONER: [Inaudible] on just timing and
10 workload?

11 MR. LEINBACH: No. Discovery stayed on her
12 processing the whole time, and so no effect with the delay
13 for Atlantis in any future flight right now, really no
14 effect to us at all.

15 MODERATOR: Let's go down the center aisle down
16 here, please.

17 QUESTIONER: Tom Walters, CTV News.

18 I am just wondering. I am not sure who would
19 like to take this, perhaps Mr. Griffin, but there is a
20 Canadian astronaut aboard this spacecraft. The robotic
21 arms on the orbiter and the ISS are both going to be used
22 in the delivery of the truss assembly.

1 I am wondering if anybody would care to
2 characterize the Canadian role in this mission.

3 MODERATOR: Well, I can do that quite readily,
4 although your own question I think pretty much did it.

5 Indeed, everything that we do to manipulate
6 objects on the Space Station as we continue with this
7 return to assembly is done with, aided by, the Canadian
8 arms. The arms on the Shuttle that we use for inspection
9 and to manipulate payloads are supplied by Canada.

10 I have pointed out on several occasions that
11 where human space flight is concerned, what we really have
12 come to, without a lot of people maybe noticing, is that
13 what we have is a world human space flight program,
14 consisting of those nations who are sufficiently advanced
15 to participate and sufficiently interested to participate.

16 We look forward to adding more partners as we
17 return to the moon and prepare for voyages to Mars, but
18 Canada has been a steadfast partner since day one on the
19 Shuttle, since before day one on the Shuttle and continues
20 to be a steadfast partner on the Station, which I think
21 shows that you don't have to be an extremely large nation
22 in order to find areas where you can make a real

1 contribution, and, of course, that is symbolized by Steve
2 MacLean's flight today, but Steve is hardly the first
3 Canadian astronaut to fly with us and certainly won't be
4 the last.

5 MODERATOR: Second row on this side, please.

6 QUESTIONER: Kelly Young with New Scientist for
7 Dr. Griffin.

8 What has to happen with this flight in order for
9 you to finalize a decision or get more comfortable with a
10 Hubble servicing mission?

11 ADMINISTRATOR GRIFFIN: Well, I will make a
12 couple of points, and then I will let Gerst also make a
13 couple, if he has any that I dropped the ball on.

14 I guess first point would be, again, we need to
15 go through our inspection timelines, which we are going to
16 do on this mission in concert with several EVAs. We need
17 to really understand how all that works because, when we go
18 to Hubble, we are not going to have Station support to rely
19 on. So we need to know that we can inspect the orbiter
20 that goes to Hubble, and we need to know that we have in
21 our hip pocket at least some rudimentary repair techniques,
22 which we proved out on the last flight, and we are going to

1 need to know that we can effectively utilize the time that
2 we have for EVAs. If we fly to orbit only to inspect, then
3 we won't get Hubble fixed.

4 We also, given our concerns over the ice/frost
5 ramps, have said in the past that we won't fly to Hubble
6 until and unless we either are more comfortable with these
7 ice/frost ramps than we are now or actually the path we are
8 on is we are replacing them. We still have a lot of data
9 to analyze in all those respects. We expect to be able to
10 make a decision by November, and when we have that final
11 decision, we will announce it.

12 We have clearly been trying to find a way to fix
13 Hubble, rather than to find a way or find reasons why we
14 can't, but we are not done yet.

15 Gerst?

16 MR. GERSTENMAIER: I don't have anything to add.

17 That was good.

18 ADMINISTRATOR GRIFFIN: Okay.

19 MODERATOR: Okay. Same row, please.

20 QUESTIONER: Brianna Keeler [ph], CNN News
21 Source.

22 What would it take to resume night launches?

1 ADMINISTRATOR GRIFFIN: Well, actually, we asked
2 ourselves that question, starting a few weeks ago, and
3 there is a fair size team that has been studying all
4 aspects of that. Actually, we think that in the not
5 distant future, we will be able to resume night launches.

6 We certainly will want a daytime launch for the
7 first flight or first couple of flights of the new
8 ice/frost ramp because we want an opportunity to see how it
9 performs, but in all likelihood, this next launch will be
10 the last launch with the current ice/frost ramp. Gathering
11 more daylight data on how an ice/frost ramp performs that
12 we don't intend to fly again may not be the most useful
13 thing to do with our launch window. So it could well work
14 out that as the team finishes their examinations, that we
15 end up saying we are okay to go at night.

16 MODERATOR: Front row, Irene, please.

17 QUESTIONER: Thanks. My question is for Mike
18 Griffin.

19 The issue with the fuel cell and then the ECO
20 sensors seemed to have sparked some rather in-depth
21 conversations about Launch Commit Criteria, flight rules,
22 and how the hardware is behaving, what you know about it.

1 I am just wondering what your take on all that is and how
2 you personally sort of weighed the issues in the discussion
3 about whether something should be changed, waive or
4 granted, in the moment, in the process of a Launch
5 Countdown when you have these established rules that were
6 set up when you were not under the circumstances of launch.

7 ADMINISTRATOR GRIFFIN: Well, first of all, we
8 were all part of those discussions. So I will take the
9 question and give you my thoughts, and others may wish to
10 chime in, and many, many people who aren't at this dias
11 were also part of those discussions.

12 As you have indicated, the discussions we had
13 during this flow, whether it was over lightning strike
14 damage or whether or not to roll back for Tropical Storm
15 Ernesto or how to deal with the loss of one phase in an AC
16 induction motor on fuel cell one or ECO sensors, engendered
17 a lot of engineering discussion. That is all good. I
18 mean, that was great. That is the kind of environment that
19 we have created and that we want to have.

20 At the same time, I would say that I think we now
21 have to be a little careful that we don't swing the
22 pendulum too far the other way.

1 You can get into situations where everything that
2 anybody has to say seems to have been said, and sometimes
3 two or three times, and if all the information has been
4 gotten out on the table and people start repeating
5 themselves, then it really is time to make a decision.

6 I would say that we have gone to great lengths,
7 and I hope successfully. After participating in the last
8 three flights, I believe we have gone to very successful
9 lengths to make sure that everyone with an opinion feels
10 entitled to air it.

11 We might be in a place where we also need to
12 remind everybody that some of the people who have opinions
13 that need to be aired are, in fact, the managers, who have
14 to make the decisions and live with them, and that
15 management is not the art of taking a poll and determining
16 which side of an issue 51 percent of the votes fall on.
17 Management is the art of collecting all of the input that
18 is provided and making a reasoned judgment about what
19 conclusion one should draw from that input.

20 Because -- and I have addressed this topic on a
21 number of prior occasions because it is important to me,
22 because time that we spend chewing on an issue, past the

1 point of productivity, is time not spent on other things
2 that might be lying there in the weeds ready to bite us.

3 Economists call this concept, the concept of
4 opportunity cost, and we live with it always. We have only
5 so many people, and we have only so much time in each flow.
6 We need to use that time in the most productive manner
7 possible, and so that is a thing that I think we are going
8 to be focusing on. We had a lot of really great
9 discussion, but we need to make sure that it is all
10 productive.

11 Now, with regard to your issue on varying of
12 Launch Commit Criteria, that is something in any launch,
13 whether it involves humans or an expendable vehicle, a
14 robotic vehicle along. It is something we just hardly ever
15 do, and we didn't do it in this case. We discussed it
16 because, when we looked at the Launch Commit Criteria
17 arrangements that had been made following the launch last
18 year of STS-114 Discovery where we agreed at that time to
19 go with three out of four ECO sensors operating after we
20 had done a detank and retank, we looked at that and said,
21 you know, the detank/retank part of that may not make the
22 most engineering sense in the world, especially in view of

1 our concerns about cycling, having putting cycles on tanks
2 with foam.

3 So, as we thought about it in the flow, we
4 thought maybe that is not the smartest thing in the world,
5 and we did consider waiving that rule and just going with
6 the good three out of four that we had yesterday.

7 Now, in the end, there were some concerns that
8 were aired, and so we decided not to. I don't think that
9 you can or should ever have as a goal that you are going to
10 remove all engineering judgment from a launch flow, from a
11 launch count, from a launch operation, or, indeed, on an
12 on-orbit operation. The rules and the procedures that you
13 work out ahead of time are there to aid you, and almost
14 always, they will be better than what you can think of in
15 the moment, but almost always is not the same as always,
16 and we need to be aware of that. We need to be mindful of
17 the role of the judgment of senior managers and engineers
18 in moving us forward toward a launch.

19 MODERATOR: Okay. Third row back in this
20 section, please.

21 QUESTIONER: Peter Aylward, Southern FM in
22 Australia, for Mike or anybody else.

1 Given the problem that you had during the
2 countdown with the fuel cell and it was subsequently, you
3 revealed, that it had been quite some period of time since
4 that fuel cell had last been run, are you going to change
5 anything in the countdown demonstration tests or lead-up to
6 run those units, to test them before you get to countdown?

7 ADMINISTRATOR GRIFFIN: You are looking at me,
8 but I am not the right guy to ask. So at least one of
9 these guys is better.

10 MR. GERSTENMAIER: We will think about that.
11 Again, the problem is -- you know, we kind of joke, "It's
12 the light bulb test." Right? You test this thing and it
13 works fine, and then it sits for a while, and then you turn
14 it on, and it doesn't work. Right? So how many times do
15 you have to test it to prove to yourself that it is really
16 going to work, or are you really wearing it out just
17 testing it?

18 So I think we will go back and look at it again
19 and see if it makes sense to do that. We do have it set in
20 the count prior to the tanking, which was done
21 purposefully, so we could watch the fuel cells. We do the
22 single-cell check on the fuel cells, which we added a

1 couple of years ago. That gives us more insight, but I
2 don't know if we will have a requirement to go start it
3 earlier.

4 We did run it, I think, in the OPF for 90 seconds
5 in this flow. So it did run for a little bit ahead of
6 time. So we did get a check-out.

7 I don't think you will see a lot change there,
8 but we will think about it and see if there is something we
9 should learn about it from this.

10 I think the other thing that has been kind of fun
11 for me, as we run into some of these problems, is I kind of
12 feed them to my exploration friends that are looking at the
13 new CLV and the CEV vehicles. I asked them things about
14 are they going to have ECO sensors.

15 [Laughter.]

16 ADMINISTRATOR GRIFFIN: Otherwise known as
17 "launch prevention devices."

18 [Laughter.]

19 MR. GERSTENMAIER: I ask them, "What do you do if
20 a hurricane comes? How fast do you roll back off the pad?
21 How fast does it take to get back out to the pad? How many
22 umbilicals are between your vehicle and the launch toward

1 that have to be unmade? How many shifts of work does it
2 take before you roll back?," and they kind of look at me
3 cross-eyes, but it is a really unique opportunity that we
4 can actually be flying, and I can ask these guys, that are
5 in the middle of writing requirements, these questions
6 based on real-world examples that we are getting every day.
7 So what a chance to improve our overall operation by
8 working together between ops and exploration to really end
9 up with the next vehicle that has thought about these
10 things that we live with every day.

11 So we are doing those same kind of questions, but
12 we are even doing them in broader areas than you would
13 imagine.

14 ADMINISTRATOR GRIFFIN: I am going to jump in on
15 this. This is our opportunity and the only one that we at
16 NASA and this Nation will ever get -- well, not ever, but
17 for at least another generation or so, to be flying out,
18 one generation of hardware, and be able to collect the
19 lessons from that generation as we design a new generation.
20 We must and we will take advantage of these opportunities,
21 and that is what Gerst is talking about. He is on top of
22 the issue, and I think you can see that. That is why we

1 have got him where he is.

2 MODERATOR: Okay. Let's go back around the side
3 over here to Lisa, please.

4 QUESTIONER: Lisa Stark with ABC News.

5 I know everything looks great right now, and
6 hopefully, it will stay that way by the 4:00 briefing. If
7 for some reason the astronauts had to seek safe haven at
8 the Station for any reason, what does that mean for the
9 Soyuz? What does it mean for all of these other vehicles
10 that are supposed to be coming up and going down?

11 MR. GERSTENMAIER: We would pretty much stay on
12 the same track with those vehicle arrivals and departures,
13 just as we have described, and we would factor in if we
14 need to change anything in terms of the cargo manifest on
15 those vehicles, depending on what we saw, if we had to go
16 do that eventuality.

17 So the basic plan would stay the way it is in
18 terms of a launch sequence, and then we would look at
19 making adjustments to that, based on whatever problems we
20 determined that we needed to correct for.

21 MODERATOR: All the way in the back corner,
22 please.

1 QUESTIONER: Hi. Rory O'Neil with Metro
2 Networks.

3 What you were talking about just a moment ago,
4 perhaps it is a question better to save for when you are at
5 wheel stuff, but now that you are getting back into
6 starting up assembly again, do you really see this as sort
7 of the beginning of the end of the Shuttle program? Is
8 that 2010 suddenly staring you right there in the
9 windshield?

10 ADMINISTRATOR GRIFFIN: Well, as, I guess, the
11 person overall in charge, I will say it is not quite as
12 stark as you paint it. I mean, 2010 is still a few years
13 off, but we are mindful of the fact that we need to operate
14 this program at or near our historic average flight rate of
15 about 4 1/2 a year in order to finish the Station assembly
16 job, and we fully intend to do that, which is why in some
17 of our previous flows since I have become Administrative, I
18 have made the point in most of these press conferences that
19 I am willing and have assumed from time to time some
20 additional programmatic risk, not human risk, but
21 programmatic risk on given decision-making opportunities in
22 order to move the flow along because it is not our intent

1 to be making decisions now which, looked at through a
2 stovepipe, are maybe the best and most perfect decision we
3 could make at this moment, but which would have
4 consequences for some other manager sitting in this chair,
5 3 or 4 years from now.

6 We need to make our decisions mindful of the fact
7 that the reason we are flying Shuttle is to finish the
8 assembly of the Station, the entire assembly of the
9 Station, and that the last flight counts just as much as
10 the one we are doing right now.

11 MR. GERSTENMAIER: Again, I don't look at it that
12 way at all. We have got a tremendous amount of work in
13 front of us. Go over in the SSPF and look at all the stuff
14 that needs to go fly, and that is not near term. We have
15 got a lot of work to do. We have got a lot of things to
16 put in place, and then we are going to work with our
17 partners to get their modules up and do a lot of activities
18 on board Station.

19 So I don't look at it as this is approaching the
20 end. This is probably one of the best times we have ever
21 had to really be in a posture to learn and to, again, kind
22 of jump-start the next program to begin.

1 This is really, in a sense, a beginning much more
2 than the way you described it. We have got huge
3 challenges, and it may not go exactly like we have it
4 scripted. Again, I think that is important for us too,
5 that we are going to learn through this process, to be
6 resilient and roll with the punches, as Mike Leinbach
7 described earlier, to make this thing happen. That is what
8 is neat about this team is they love the challenges, and
9 they love the work in front of them, and that is what
10 drives them and motivates them. So I don't think there is
11 any better time to be here doing what we are doing.

12 I don't think of this as being the beginning of
13 the end. This is the beginning of the beginning.

14 ADMINISTRATOR GRIFFIN: Yes.

15 MODERATOR: Let's go all the way in the back on
16 this side.

17 QUESTIONER: Hi. Eliot Kleinberg from the Palm
18 Beach Post.

19 The flying foam that you saw at 4:07, did you see
20 any indication that it actually struck the spacecraft, and
21 could you also explain in lay terms why at that stage in
22 the ascent, it is not really a threat to the spacecraft?

1 MR. CAIN: As I said before, I have not seen the
2 video myself, and the folks that passed on the information
3 to me didn't indicate that there was any kind of debris
4 that struck the orbiter. So I don't know the answer to
5 your question, but, again, Wayne will be here at 4:00 p.m.
6 this afternoon, and he will know. So he will share all of
7 that information with you.

8 ADMINISTRATOR GRIFFIN: I will do the lay terms
9 explanation.

10 What we are talking about here is exactly what
11 happens if you -- which you should never do -- throw a wad
12 of paper out your car window while you are moving along.
13 The speed of the airstream outside the car picks up the wad
14 of paper and moves it, relative to your car, to the rear at
15 a substantial velocity because you have got a good wind
16 outside when you are driving along at 60 miles an hour.

17 When we launch a Space Shuttle, of course, they
18 end up going quite fast, but when we get above the sensible
19 atmosphere, the atmosphere that you could feel if you put
20 your hand out into it, in any significant way, when we get
21 above the sensible atmosphere, there is no aerodynamic
22 force to speak of that would grab that paper wad or piece

1 of foam or whatever and sweep it back into the wing at a
2 high velocity.

3 When we reach that point, what we call the
4 aerodynamically sensitive transport time or aerodynamically
5 significant transport time, when we reach that point, we
6 have reached the point where there is just not enough
7 sensible atmosphere to create a significant velocity on a
8 piece of foam which falls off, and at that point, it
9 doesn't matter anymore.

10 Was that helpful? Okay.

11 MODERATOR: Okay. Any more questions? Seth.

12 QUESTIONER: Seth Borenstein, Associated Press.

13 Administrator Griffin, you talked a little while
14 ago about what we have is a world human space flight
15 program. You are heading off to China soon. Can you tell
16 us where you see China's role here, and what specifics are
17 you going to be talking about?

18 ADMINISTRATOR GRIFFIN: You have got the cart way
19 out in front of the horse. It is so far out in front of
20 the horse, I can't see the cart.

21 [Laughter.]

22 ADMINISTRATOR GRIFFIN: No NASA Administrator has

1 been to China. We have never had any significant
2 discussions with China about space. This is a
3 get-acquainted session, and it is nothing more, and to
4 characterize it as anything more would be to create
5 expectations that would be possibly embarrassing to us or
6 embarrassing to China, and none of us wants to do that.

7 We want to use this visit to get acquainted and
8 look for and maybe consider opportunities where we could
9 work together.

10 MODERATOR: Next.

11 QUESTIONER: I also have kind of a tangential
12 question, but I will ask Bill Gerstenmaier instead.

13 I was just wondering what you thought about the
14 prospect of a tourist being on the Space Station at this
15 time during a very dynamic assembly period.

16 MR. GERSTENMAIER: Again, I think it is okay from
17 an overall standpoint. We have planned for this, and the
18 Station is a pretty stable configuration. We will get the
19 truss added during this week, and it will be fine.

20 MODERATOR: Okay. Todd?

21 QUESTIONER: Todd Halvorson of Florida Today. I
22 don't know. Maybe for Gerst.

1 What is your latest thinking on how long you want
2 to keep CSCS capability in place in terms of the ability to
3 launch rescue missions, if need be?

4 MR. GERSTENMAIER: I think we have been kind of
5 planning to keep it around through all the remaining
6 Shuttle flights, and we will see how that occurs.

7 We can fairly -- I got to be careful. My tank
8 friends will not say that this is easy, but, in some way,
9 it comes about pretty naturally through our processing flow
10 of where we have got the flights. It comes about without a
11 fair amount of undue trouble for us, and I think it is a
12 good safety net for us to keep around. So we are going to
13 go ahead and try to keep it throughout the program and see
14 how it fits in place.

15 We may make some deviations somewhere along the
16 line, but I think in general it fits throughout the
17 remainder of the flight.

18 MODERATOR: Okay. If that's it, thank you very
19 much for coming.

20 Our next briefing, as we said, will be around
21 4:00 p.m. this afternoon, Eastern Time, with Shuttle
22 Program Manager Wayne Hale, which will be the Post-Launch

