



1  
00:00:07,030 --> 00:00:05,190  
good evening thank you for joining us

2  
00:00:08,430 --> 00:00:07,040  
here at nasa's kennedy space center in

3  
00:00:10,950 --> 00:00:08,440  
florida for this

4  
00:00:13,350 --> 00:00:10,960  
sts-133 status briefing following the

5  
00:00:15,509 --> 00:00:13,360  
mission management team meeting today

6  
00:00:17,349 --> 00:00:15,519  
i'd like to introduce our panelists mike

7  
00:00:20,230 --> 00:00:17,359  
moses chair of the pre-launch mission

8  
00:00:21,590 --> 00:00:20,240  
management team good evening

9  
00:00:23,830 --> 00:00:21,600  
and mike linebach shuttle launch

10  
00:00:26,070 --> 00:00:23,840  
director good evening

11  
00:00:27,349 --> 00:00:26,080  
i'd like to take just a few minutes to

12  
00:00:29,269 --> 00:00:27,359  
have our briefer speak we're going to

13  
00:00:30,470 --> 00:00:29,279

keep this briefing very short so that

14

00:00:32,790 --> 00:00:30,480

they can go home and get some sleep

15

00:00:34,229 --> 00:00:32,800

before tomorrow morning mr moses

16

00:00:37,190 --> 00:00:34,239

thanks henry

17

00:00:39,190 --> 00:00:37,200

well we had our mmt today we talked for

18

00:00:40,869 --> 00:00:39,200

a while as we knew we would it was

19

00:00:42,229 --> 00:00:40,879

basically the culmination of the teams

20

00:00:44,069 --> 00:00:42,239

working

21

00:00:45,910 --> 00:00:44,079

for the last 24 hours to pull together

22

00:00:47,910 --> 00:00:45,920

the story that we have

23

00:00:50,229 --> 00:00:47,920

uh with regards to this power anomaly we

24

00:00:51,830 --> 00:00:50,239

saw on the main engine controller

25

00:00:54,709 --> 00:00:51,840

and again just as a refresher when we

26

00:00:56,229 --> 00:00:54,719

powered it up uh during a test now

27

00:00:58,709 --> 00:00:56,239

yesterday morning

28

00:01:00,790 --> 00:00:58,719

we saw an anomaly uh in the signature

29

00:01:03,029 --> 00:01:00,800

that was unusual basically one of the

30

00:01:05,429 --> 00:01:03,039

phases of ac power there's three phases

31

00:01:06,870 --> 00:01:05,439

on an alternating current circuit uh one

32

00:01:09,030 --> 00:01:06,880

of those three did not engage and the

33

00:01:10,230 --> 00:01:09,040

controller therefore did not power up

34

00:01:12,710 --> 00:01:10,240

about an hour and a half it kind of

35

00:01:14,310 --> 00:01:12,720

healed itself and started working

36

00:01:16,310 --> 00:01:14,320

and then about another two hours after

37

00:01:17,990 --> 00:01:16,320

that we saw a little voltage drop that

38

00:01:20,310 --> 00:01:18,000

didn't trip anything off but it was at

39

00:01:21,910 --> 00:01:20,320  
the time an unexplained voltage drop and

40

00:01:23,510 --> 00:01:21,920  
that gave us pause

41

00:01:25,749 --> 00:01:23,520  
so we talked overnight and the teams

42

00:01:27,990 --> 00:01:25,759  
brought us a very good story today

43

00:01:29,990 --> 00:01:28,000  
a very nice cohesive flow through the

44

00:01:31,830 --> 00:01:30,000  
data we reviewed the history

45

00:01:33,510 --> 00:01:31,840  
the timeline of the events other

46

00:01:34,950 --> 00:01:33,520  
signatures that have occurred similar to

47

00:01:36,630 --> 00:01:34,960  
this in the past we talked a lot about

48

00:01:38,550 --> 00:01:36,640  
our history and our knowledge of the

49

00:01:41,350 --> 00:01:38,560  
circuit breakers the components in the

50

00:01:42,550 --> 00:01:41,360  
system the switches the wiring

51  
00:01:43,990 --> 00:01:42,560  
we talked a lot about the main engine

52  
00:01:46,310 --> 00:01:44,000  
controllers themselves

53  
00:01:48,789 --> 00:01:46,320  
their tolerance their redundancy

54  
00:01:50,950 --> 00:01:48,799  
and then ultimately went to a risk

55  
00:01:52,310 --> 00:01:50,960  
presentation of of what do we know about

56  
00:01:53,990 --> 00:01:52,320  
the problem what don't we know and is

57  
00:01:55,590 --> 00:01:54,000  
that an acceptable condition to to

58  
00:01:57,670 --> 00:01:55,600  
proceed with

59  
00:01:59,030 --> 00:01:57,680  
at the end of the day uh i'll kind of

60  
00:02:00,709 --> 00:01:59,040  
cut to the chase and say we wrapped up

61  
00:02:02,950 --> 00:02:00,719  
with uh with a unanimous poll out of the

62  
00:02:04,550 --> 00:02:02,960  
mmt uh no dissenting opinions no

63  
00:02:06,310 --> 00:02:04,560

requests for more data everybody was

64

00:02:09,589 --> 00:02:06,320

very comfortable with the story that

65

00:02:11,270 --> 00:02:09,599

came together today and again really the

66

00:02:13,190 --> 00:02:11,280

rationale there is that

67

00:02:14,790 --> 00:02:13,200

that all evidence points to this being a

68

00:02:16,949 --> 00:02:14,800

circuit breaker problem so a power

69

00:02:18,550 --> 00:02:16,959

supply feed problem it's not a

70

00:02:20,630 --> 00:02:18,560

controller problem so it's not a main

71

00:02:22,470 --> 00:02:20,640

engine controller so no worries there

72

00:02:25,270 --> 00:02:22,480

that the main engine controller itself

73

00:02:26,949 --> 00:02:25,280

is going to have problems later on

74

00:02:28,150 --> 00:02:26,959

from a power feed standpoint really what

75

00:02:29,430 --> 00:02:28,160

we saw

76

00:02:30,869 --> 00:02:29,440

and i'll kind of simplify it but

77

00:02:32,949 --> 00:02:30,879

basically

78

00:02:35,350 --> 00:02:32,959

these circuit breakers

79

00:02:36,790 --> 00:02:35,360

are used in the orbiter we use them as

80

00:02:38,150 --> 00:02:36,800

uh as switches sometimes you know in

81

00:02:39,670 --> 00:02:38,160

your home you don't use the circuit

82

00:02:41,910 --> 00:02:39,680

breaker as the switch to turn the lights

83

00:02:43,910 --> 00:02:41,920

on and off you have a switch to do that

84

00:02:45,670 --> 00:02:43,920

um as a design and a weight savings

85

00:02:47,430 --> 00:02:45,680

feature in some circuits the circuit

86

00:02:49,350 --> 00:02:47,440

breaker is used as that switch sometimes

87

00:02:51,110 --> 00:02:49,360

it's because there's ways to send

88

00:02:52,630 --> 00:02:51,120

multiple power feeds to a given piece of

89

00:02:54,070 --> 00:02:52,640

equipment and you don't want to switch

90

00:02:55,509 --> 00:02:54,080

to have all that power sitting right

91

00:02:57,350 --> 00:02:55,519

next to it you use a circuit breaker to

92

00:02:59,910 --> 00:02:57,360

do that sometimes it's just more

93

00:03:01,910 --> 00:02:59,920

convenient and easier to to save wiring

94

00:03:03,509 --> 00:03:01,920

to do that so in in many instances and

95

00:03:05,270 --> 00:03:03,519

this is one of those instances that

96

00:03:07,030 --> 00:03:05,280

circuit breaker is used as a switch now

97

00:03:08,229 --> 00:03:07,040

there's also a switch

98

00:03:09,589 --> 00:03:08,239

used to turn it on and off so these

99

00:03:10,630 --> 00:03:09,599

circuit breakers aren't cycled with

100

00:03:12,710 --> 00:03:10,640

power

101  
00:03:14,710 --> 00:03:12,720  
going to that circuit breaker so they're

102  
00:03:15,830 --> 00:03:14,720  
not cycled hot but what we've seen

103  
00:03:16,869 --> 00:03:15,840  
historically in the history of the

104  
00:03:19,110 --> 00:03:16,879  
program is these circuit breakers

105  
00:03:20,149 --> 00:03:19,120  
sometimes don't engage when you push

106  
00:03:21,589 --> 00:03:20,159  
them in you don't quite make that

107  
00:03:22,550 --> 00:03:21,599  
contact you don't quite get the

108  
00:03:24,229 --> 00:03:22,560  
connection

109  
00:03:26,470 --> 00:03:24,239  
and we we have a pre-approved

110  
00:03:28,309 --> 00:03:26,480  
contingency procedure which we call uh

111  
00:03:29,750 --> 00:03:28,319  
basically scrubbing the breaker and you

112  
00:03:30,869 --> 00:03:29,760  
you pull it in and out five times

113  
00:03:31,990 --> 00:03:30,879

cycling it

114

00:03:33,190 --> 00:03:32,000

and then you push it back and you turn

115

00:03:35,910 --> 00:03:33,200

the power back on and you see what you

116

00:03:37,270 --> 00:03:35,920

got and uh and in in almost every single

117

00:03:39,270 --> 00:03:37,280

instance that results in a good

118

00:03:41,670 --> 00:03:39,280

connection and in fact in every instance

119

00:03:43,430 --> 00:03:41,680

where we see a good connection of good

120

00:03:46,149 --> 00:03:43,440

power feed connection that connection

121

00:03:47,589 --> 00:03:46,159

then stays and lasts and does not give

122

00:03:49,190 --> 00:03:47,599

us any more troubles

123

00:03:51,430 --> 00:03:49,200

we went through a lot of failure history

124

00:03:53,110 --> 00:03:51,440

there were instances where um

125

00:03:54,789 --> 00:03:53,120

we've had circuit breakers fail to

126

00:03:55,589 --> 00:03:54,799

engage we scrubbed them pushed them back

127

00:03:57,350 --> 00:03:55,599

in

128

00:03:58,789 --> 00:03:57,360

they've engaged we leave that circuit

129

00:04:00,949 --> 00:03:58,799

breaker in the ship we don't take it out

130

00:04:02,390 --> 00:04:00,959

and they've flown for 20 years with no

131

00:04:04,630 --> 00:04:02,400

reoccurrence of that problem that made

132

00:04:05,990 --> 00:04:04,640

it not quite engaged the first time

133

00:04:07,190 --> 00:04:06,000

and really what we went through is a lot

134

00:04:08,949 --> 00:04:07,200

of details

135

00:04:10,630 --> 00:04:08,959

the act of using the circuit breaker as

136

00:04:12,789 --> 00:04:10,640

a switch can cause a little bit of build

137

00:04:13,990 --> 00:04:12,799

up as there's some arcing and some

138

00:04:15,270 --> 00:04:14,000

current coming back and forth and you

139

00:04:17,590 --> 00:04:15,280

get a little pitting you get an uneven

140

00:04:19,270 --> 00:04:17,600

contact surface uh the phenolic in there

141

00:04:20,789 --> 00:04:19,280

tends to get a little hot and melt and

142

00:04:23,110 --> 00:04:20,799

you get a little non-metallic

143

00:04:25,590 --> 00:04:23,120

non-conducting residue that builds up on

144

00:04:27,030 --> 00:04:25,600

these connectors and by pushing them in

145

00:04:29,030 --> 00:04:27,040

and out scrubbing them back and forth

146

00:04:30,150 --> 00:04:29,040

you can knock that off

147

00:04:31,350 --> 00:04:30,160

so what we think happened in this

148

00:04:32,790 --> 00:04:31,360

instance was

149

00:04:34,230 --> 00:04:32,800

that's the scenario we had we had a

150

00:04:36,310 --> 00:04:34,240

little bit of residue built up on this

151  
00:04:39,350 --> 00:04:36,320  
circuit breaker when we first pushed it

152  
00:04:40,390 --> 00:04:39,360  
in it did not connect and because of the

153  
00:04:41,670 --> 00:04:40,400  
sensitivity to the main engine

154  
00:04:43,510 --> 00:04:41,680  
controller rather than immediately

155  
00:04:45,830 --> 00:04:43,520  
scrubbing that breaker we sat and talked

156  
00:04:47,670 --> 00:04:45,840  
about it while we were talking about it

157  
00:04:50,230 --> 00:04:47,680  
the the dielectric basically the circuit

158  
00:04:51,430 --> 00:04:50,240  
breaker itself the current overcame the

159  
00:04:53,749 --> 00:04:51,440  
little bit of resistance that it was

160  
00:04:55,510 --> 00:04:53,759  
facing uh and the impedance that it was

161  
00:04:56,950 --> 00:04:55,520  
generating and it made the connection

162  
00:04:58,310 --> 00:04:56,960  
and therefore sent power downstream to

163  
00:05:00,629 --> 00:04:58,320

the controller which powered itself up

164

00:05:03,189 --> 00:05:00,639

and and that resulted in the uh the kind

165

00:05:05,270 --> 00:05:03,199

of the uh unexpected self-powering of

166

00:05:06,870 --> 00:05:05,280

the of the uh of the controller that we

167

00:05:09,029 --> 00:05:06,880

saw yesterday morning now i say

168

00:05:10,310 --> 00:05:09,039

unexpected that's really very well

169

00:05:11,990 --> 00:05:10,320

explained now that we understand what

170

00:05:14,310 --> 00:05:12,000

was what was going on so it's not that

171

00:05:15,430 --> 00:05:14,320

something unknown was happening

172

00:05:17,189 --> 00:05:15,440

the the

173

00:05:18,629 --> 00:05:17,199

the act of scrubbing it we then went and

174

00:05:20,790 --> 00:05:18,639

scrubbed it when we put it back in we

175

00:05:22,790 --> 00:05:20,800

looked at the high speed data and found

176  
00:05:23,909 --> 00:05:22,800  
that that second power up after we did

177  
00:05:25,909 --> 00:05:23,919  
that first set of troubleshooting where

178  
00:05:27,749 --> 00:05:25,919  
we scrubbed the breaker showed a little

179  
00:05:29,189 --> 00:05:27,759  
bit slow response in the power up as

180  
00:05:31,990 --> 00:05:29,199  
well not nearly enough to cause a

181  
00:05:32,790 --> 00:05:32,000  
problem but it wasn't quite perfect

182  
00:05:34,150 --> 00:05:32,800  
so

183  
00:05:35,430 --> 00:05:34,160  
further proof that we probably knocked

184  
00:05:36,950 --> 00:05:35,440  
some of that contamination off but we

185  
00:05:38,070 --> 00:05:36,960  
didn't quite get it all

186  
00:05:39,909 --> 00:05:38,080  
a little after that we had this

187  
00:05:42,469 --> 00:05:39,919  
unexpected voltage drop

188  
00:05:43,749 --> 00:05:42,479

again very indicative of the fact that

189

00:05:44,950 --> 00:05:43,759

there's a little bit of resistance in

190

00:05:45,990 --> 00:05:44,960

there

191

00:05:47,990 --> 00:05:46,000

we went through the data i think i

192

00:05:49,909 --> 00:05:48,000

mentioned yesterday that about a 40 ohm

193

00:05:51,830 --> 00:05:49,919

resistance in this circuit

194

00:05:54,070 --> 00:05:51,840

in test the theory actually the model

195

00:05:56,150 --> 00:05:54,080

shows it only takes a 9 ohm resistance

196

00:05:57,430 --> 00:05:56,160

to cause the voltage drop we saw so it

197

00:05:59,270 --> 00:05:57,440

just takes a minor little bit of

198

00:06:00,950 --> 00:05:59,280

contamination there to cause this

199

00:06:03,029 --> 00:06:00,960

signature the other piece of data we

200

00:06:04,710 --> 00:06:03,039

found is this voltage drop is not as

201  
00:06:07,990 --> 00:06:04,720  
uncommon as we thought it was it

202  
00:06:10,070 --> 00:06:08,000  
actually occurs not often but a fair bit

203  
00:06:13,270 --> 00:06:10,080  
as the controller responds to the power

204  
00:06:14,870 --> 00:06:13,280  
on the input side a fan kicking on

205  
00:06:16,950 --> 00:06:14,880  
the controller itself drawing a little

206  
00:06:19,350 --> 00:06:16,960  
more current causes this voltage to kind

207  
00:06:20,870 --> 00:06:19,360  
of fluctuate just a little bit the one

208  
00:06:22,550 --> 00:06:20,880  
we saw was a little higher magnitude

209  
00:06:24,150 --> 00:06:22,560  
than we've seen in the past maybe a

210  
00:06:25,909 --> 00:06:24,160  
little longer duration but it was still

211  
00:06:27,270 --> 00:06:25,919  
not the only time we've ever seen it

212  
00:06:28,309 --> 00:06:27,280  
which is where we were yesterday we

213  
00:06:30,150 --> 00:06:28,319

thought this might have been an only

214

00:06:31,510 --> 00:06:30,160

time occurrence so another big piece of

215

00:06:33,990 --> 00:06:31,520

data that got us comfortable today was

216

00:06:35,990 --> 00:06:34,000

the fact that it's not all that uncommon

217

00:06:38,390 --> 00:06:36,000

um and so again when we laid it all out

218

00:06:40,550 --> 00:06:38,400

it all racked up to be pretty clear that

219

00:06:41,749 --> 00:06:40,560

uh that our most probable cause here is

220

00:06:43,350 --> 00:06:41,759

that that we had contamination on that

221

00:06:44,790 --> 00:06:43,360

circuit breaker that we've slowly

222

00:06:46,550 --> 00:06:44,800

cleared off by scrubbing it in fact

223

00:06:47,590 --> 00:06:46,560

after we left last night after we left

224

00:06:49,430 --> 00:06:47,600

the press conference last night we

225

00:06:51,029 --> 00:06:49,440

scrubbed it five more times those power

226

00:06:52,710 --> 00:06:51,039

up signatures were perfect just like

227

00:06:54,469 --> 00:06:52,720

they've been in the past so

228

00:06:56,390 --> 00:06:54,479

pretty good proof that we've knocked the

229

00:06:58,070 --> 00:06:56,400

contamination off our history shows us

230

00:06:59,830 --> 00:06:58,080

that once we do that that is a solid

231

00:07:00,870 --> 00:06:59,840

connection and it's not going to change

232

00:07:03,670 --> 00:07:00,880

and therefore we had pretty good

233

00:07:06,550 --> 00:07:03,680

acceptance rationale today to go fly um

234

00:07:07,749 --> 00:07:06,560

and so again we kind of went through uh

235

00:07:09,670 --> 00:07:07,759

all the ins and outs we talked about

236

00:07:11,350 --> 00:07:09,680

what if we're wrong we talked about all

237

00:07:13,270 --> 00:07:11,360

the things that could be bad and at the

238

00:07:14,870 --> 00:07:13,280

end of the day while we don't completely

239

00:07:16,309 --> 00:07:14,880

understand the failure because we don't

240

00:07:17,909 --> 00:07:16,319

have it sitting in front of us as a

241

00:07:19,749 --> 00:07:17,919

failed component

242

00:07:21,909 --> 00:07:19,759

everybody was comfortable with the with

243

00:07:23,430 --> 00:07:21,919

the residual risk left that that was an

244

00:07:25,589 --> 00:07:23,440

acceptable one to take and we do

245

00:07:27,749 --> 00:07:25,599

understand that anomaly that we had and

246

00:07:29,670 --> 00:07:27,759

again we're good to fly

247

00:07:31,270 --> 00:07:29,680

so that takes us to the schedule and

248

00:07:32,790 --> 00:07:31,280

just try to cut off some of the

249

00:07:35,029 --> 00:07:32,800

questions right the weather still looks

250

00:07:36,390 --> 00:07:35,039

really bad for tomorrow but but we're

251  
00:07:38,469 --> 00:07:36,400  
going to go ahead and go down to the

252  
00:07:39,749 --> 00:07:38,479  
tanking telecon in the morning basically

253  
00:07:40,710 --> 00:07:39,759  
at 5 30 in the morning the team's going

254  
00:07:42,309 --> 00:07:40,720  
to get together and we'll talk about

255  
00:07:44,790 --> 00:07:42,319  
what the latest forecast is we'll see

256  
00:07:46,390 --> 00:07:44,800  
what that is um you know if the forecast

257  
00:07:48,550 --> 00:07:46,400  
tomorrow morning is still as bad as it

258  
00:07:49,670 --> 00:07:48,560  
is today there's a chance we might

259  
00:07:52,150 --> 00:07:49,680  
decide not to spend one of our

260  
00:07:53,670 --> 00:07:52,160  
opportunities tomorrow but uh but it's

261  
00:07:54,629 --> 00:07:53,680  
not it's too early to make that call

262  
00:07:56,710 --> 00:07:54,639  
right now we need to see what the

263  
00:07:58,390 --> 00:07:56,720

forecast is 12 hours out it's a whole

264

00:07:59,830 --> 00:07:58,400

lot better forecast 12 hours out than it

265

00:08:01,110 --> 00:07:59,840

is 24 out

266

00:08:03,510 --> 00:08:01,120

especially when that front's not quite

267

00:08:04,950 --> 00:08:03,520

moving as as much as as we maybe thought

268

00:08:06,150 --> 00:08:04,960

it was that might be a good thing it

269

00:08:07,830 --> 00:08:06,160

might be a bad thing but we'll know

270

00:08:10,150 --> 00:08:07,840

better in the morning what that really

271

00:08:11,749 --> 00:08:10,160

means to us so gave mike and his team

272

00:08:13,830 --> 00:08:11,759

the challenge to go have us ready to go

273

00:08:15,830 --> 00:08:13,840

and with the caveats still that as

274

00:08:17,430 --> 00:08:15,840

always the weather might make us make a

275

00:08:18,950 --> 00:08:17,440

different course of action but from the

276

00:08:20,629 --> 00:08:18,960

vehicle perspective and the mission

277

00:08:21,830 --> 00:08:20,639

management team we're ready to go and at

278

00:08:23,189 --> 00:08:21,840

this point kind of turn the reins over

279

00:08:26,150 --> 00:08:23,199

here to the uh the launch team and

280

00:08:27,830 --> 00:08:26,160

execute uh launch for discovery okay

281

00:08:29,589 --> 00:08:27,840

thanks mike let's see the team in the

282

00:08:31,749 --> 00:08:29,599

firing room is doing doing really well

283

00:08:33,750 --> 00:08:31,759

um the additional hole we added to the

284

00:08:36,230 --> 00:08:33,760

countdown is presents no problem to us

285

00:08:37,750 --> 00:08:36,240

at all we recycled uh some mid deck

286

00:08:39,430 --> 00:08:37,760

experiments to refresh them so

287

00:08:41,430 --> 00:08:39,440

essentially when we get into countdown

288

00:08:43,509 --> 00:08:41,440

tomorrow we'll be in a first first

289

00:08:45,829 --> 00:08:43,519

launch countdown posture

290

00:08:47,509 --> 00:08:45,839

we wanted to rotate the rotating service

291

00:08:49,509 --> 00:08:47,519

structure to the park position tonight

292

00:08:50,550 --> 00:08:49,519

at about 6 30 and we got we got held up

293

00:08:52,790 --> 00:08:50,560

because of

294

00:08:55,430 --> 00:08:52,800

a phase one lightning concern in the

295

00:08:57,590 --> 00:08:55,440

area so we're on hold for the rss right

296

00:08:58,870 --> 00:08:57,600

now that that's not a big concern for us

297

00:09:00,470 --> 00:08:58,880

talking to the range weather before i

298

00:09:02,230 --> 00:09:00,480

came into this briefing

299

00:09:04,310 --> 00:09:02,240

kathy winters expects that to last an

300

00:09:05,750 --> 00:09:04,320

hour maybe an hour and a half or so and

301

00:09:07,990 --> 00:09:05,760

we should be able to get the rss

302

00:09:09,910 --> 00:09:08,000

retracted in about an hour and that's

303

00:09:11,509 --> 00:09:09,920

that's no issue for us

304

00:09:13,030 --> 00:09:11,519

the rest of the countdown is is very

305

00:09:15,110 --> 00:09:13,040

very nominal for us we're looking for

306

00:09:17,430 --> 00:09:15,120

the opening launch window at 15 24

307

00:09:19,990 --> 00:09:17,440

tomorrow afternoon eastern time

308

00:09:21,829 --> 00:09:20,000

team's in great shape ready to execute

309

00:09:23,350 --> 00:09:21,839

i just might add to the to uh the

310

00:09:25,190 --> 00:09:23,360

mission management team discussion you

311

00:09:27,350 --> 00:09:25,200

know from my perspective it sounds very

312

00:09:28,949 --> 00:09:27,360

very good the flight rationale is solid

313

00:09:30,710 --> 00:09:28,959

uh scrubbing off circuit breakers is

314

00:09:32,630 --> 00:09:30,720

something we do very very standard

315

00:09:34,949 --> 00:09:32,640

process here at ksc we have a procedure

316

00:09:36,949 --> 00:09:34,959

to do that so it really truly sounds

317

00:09:38,150 --> 00:09:36,959

like like we've got the culprit and and

318

00:09:39,350 --> 00:09:38,160

we've cleaned it off and we should be

319

00:09:40,949 --> 00:09:39,360

good to go

320

00:09:41,990 --> 00:09:40,959

so team's ready to execute and we'll

321

00:09:43,750 --> 00:09:42,000

come in in the morning and see if the

322

00:09:45,030 --> 00:09:43,760

weather permits a tanking and a launch

323

00:09:45,910 --> 00:09:45,040

attempt tomorrow

324

00:09:47,829 --> 00:09:45,920

thanks

325

00:09:49,269 --> 00:09:47,839

thank you we have time for just a few

326

00:09:51,190 --> 00:09:49,279

questions when the microphone comes your

327

00:09:52,389 --> 00:09:51,200

way state your name affiliation to whom

328

00:09:55,990 --> 00:09:52,399

you're addressing your question we'll

329

00:09:59,509 --> 00:09:57,910

bill harwood cbs news for either one of

330

00:10:00,389 --> 00:09:59,519

you uh you guys were talking yesterday

331

00:10:02,069 --> 00:10:00,399

about

332

00:10:03,670 --> 00:10:02,079

uh not overstressing the launch team and

333

00:10:05,190 --> 00:10:03,680

i'm just curious what the forecast being

334

00:10:06,870 --> 00:10:05,200

what it is and the fact that these guys

335

00:10:08,470 --> 00:10:06,880

have been working pretty hard

336

00:10:10,310 --> 00:10:08,480

over the last day

337

00:10:11,829 --> 00:10:10,320

uh to generate all this data give you

338

00:10:13,910 --> 00:10:11,839

guys this presentation and then go home

339

00:10:14,790 --> 00:10:13,920

and come back in a couple of hours to

340

00:10:17,030 --> 00:10:14,800

tank

341

00:10:18,710 --> 00:10:17,040

with a pretty bad outlook why not wave

342

00:10:20,389 --> 00:10:18,720

off a day right now

343

00:10:21,910 --> 00:10:20,399

well we talked to the team that put

344

00:10:23,670 --> 00:10:21,920

together all the charts today and and

345

00:10:25,190 --> 00:10:23,680

really the the team that's going to come

346

00:10:27,350 --> 00:10:25,200

in tomorrow morning and fuel the

347

00:10:29,190 --> 00:10:27,360

vehicles is a different team now there

348

00:10:31,110 --> 00:10:29,200

are some there are some people that were

349

00:10:32,710 --> 00:10:31,120

at the presentation all day long today

350

00:10:35,030 --> 00:10:32,720

and have to cycle back in tomorrow

351

00:10:37,670 --> 00:10:35,040

morning but it's just a handful of folks

352

00:10:39,110 --> 00:10:37,680

and so that's not an issue we also asked

353

00:10:41,110 --> 00:10:39,120

if the team would be prepared for three

354

00:10:42,790 --> 00:10:41,120

in a row if that if that should become

355

00:10:44,069 --> 00:10:42,800

necessary if we don't tank tomorrow for

356

00:10:46,710 --> 00:10:44,079

whatever reason

357

00:10:48,870 --> 00:10:46,720

and wave that off would we be able to go

358

00:10:50,630 --> 00:10:48,880

three in a row and given the one day

359

00:10:52,230 --> 00:10:50,640

additional time in the countdown uh

360

00:10:53,829 --> 00:10:52,240

people cycled back we were essentially

361

00:10:55,269 --> 00:10:53,839

in a babysitting mode in the firing room

362

00:10:56,949 --> 00:10:55,279

so everybody got

363

00:10:59,190 --> 00:10:56,959

a good day off we made sure that

364

00:11:00,949 --> 00:10:59,200

everybody is working to the to our work

365

00:11:02,470 --> 00:11:00,959

rules that we have in place

366

00:11:04,470 --> 00:11:02,480

so right now i don't see an issue with

367

00:11:06,630 --> 00:11:04,480

uh with tomorrow certainly and even if

368

00:11:08,470 --> 00:11:06,640

we get into a three in a row scenario

369

00:11:10,710 --> 00:11:08,480

we always ask the team before that third

370

00:11:12,230 --> 00:11:10,720

attempt if they're ready to go um and we

371

00:11:13,750 --> 00:11:12,240

would do that again of course but but

372

00:11:15,750 --> 00:11:13,760

the pre-planning for that says we should

373

00:11:16,630 --> 00:11:15,760

be fine

374

00:11:20,150 --> 00:11:16,640

james

375

00:11:22,870 --> 00:11:20,160

three in a row what you expect you you

376

00:11:23,829 --> 00:11:22,880

would attempt uh

377

00:11:26,389 --> 00:11:23,839

you know depending on what happens

378

00:11:29,350 --> 00:11:26,399

tomorrow or depends it's early to say

379

00:11:31,430 --> 00:11:29,360

what is your latest on uh your your last

380

00:11:32,630 --> 00:11:31,440

possible launch option and

381

00:11:33,910 --> 00:11:32,640

you know yeah we're talking about the

382

00:11:36,069 --> 00:11:33,920

window and extending the window out i

383

00:11:38,470 --> 00:11:36,079

mentioned that a couple times um uh

384

00:11:39,750 --> 00:11:38,480

right now the the it looks like there's

385

00:11:40,870 --> 00:11:39,760

there's potential there to make that

386

00:11:43,430 --> 00:11:40,880

happen but some of the hurdles are

387

00:11:44,870 --> 00:11:43,440

pretty big um and and so right now the

388

00:11:48,470 --> 00:11:44,880

the posture is that we're not going to

389

00:11:49,990 --> 00:11:48,480

pursue that um and again uh i say that

390

00:11:51,829 --> 00:11:50,000

and then we always have the caveat that

391

00:11:53,269 --> 00:11:51,839

we might find a way to make it work but

392

00:11:56,629 --> 00:11:53,279

uh right now it looks like the the

393

00:11:57,829 --> 00:11:56,639

seventh is still our last launch attempt

394

00:12:01,430 --> 00:11:57,839

marcia

395

00:12:02,790 --> 00:12:01,440

questions have been

396

00:12:03,829 --> 00:12:02,800

asked but i'll come up with something

397

00:12:04,710 --> 00:12:03,839

here

398

00:12:07,670 --> 00:12:04,720

um

399

00:12:09,910 --> 00:12:07,680

you know we've been reminiscing for the

400

00:12:11,509 --> 00:12:09,920

last week about discovery's last launch

401  
00:12:13,190 --> 00:12:11,519  
mike yesterday you said that you know

402  
00:12:15,350 --> 00:12:13,200  
she doesn't want to go out quietly and

403  
00:12:17,990 --> 00:12:15,360  
or easily um

404  
00:12:19,910 --> 00:12:18,000  
any mention of that today or any new

405  
00:12:22,470 --> 00:12:19,920  
reflection on any of that

406  
00:12:23,590 --> 00:12:22,480  
no there's there's no talk in the in the

407  
00:12:25,190 --> 00:12:23,600  
briefing today

408  
00:12:27,110 --> 00:12:25,200  
about discoveries last flight it was all

409  
00:12:29,269 --> 00:12:27,120  
about the anomaly and and do we

410  
00:12:31,430 --> 00:12:29,279  
understand it and and are we safe to fly

411  
00:12:34,550 --> 00:12:31,440  
an answer to that is yes so now there

412  
00:12:37,030 --> 00:12:34,560  
was no reflection to that meeting at all

413  
00:12:38,710 --> 00:12:37,040

greg dobbs with hd net television can

414

00:12:40,389 --> 00:12:38,720

you give us a picture if if you can give

415

00:12:42,230 --> 00:12:40,399

us a picture of the scrubbing what does

416

00:12:44,230 --> 00:12:42,240

this actually mean i mean sort of i'm

417

00:12:45,350 --> 00:12:44,240

picturing a switch going in and out and

418

00:12:47,829 --> 00:12:45,360

the residue

419

00:12:50,150 --> 00:12:47,839

gets pushed off by the uh the female in

420

00:12:51,910 --> 00:12:50,160

the male-female relationship it's

421

00:12:53,910 --> 00:12:51,920

actually a um

422

00:12:55,509 --> 00:12:53,920

it's a metal to metal contact so there's

423

00:12:57,350 --> 00:12:55,519

the the passive part of the circuit

424

00:12:58,710 --> 00:12:57,360

breaker is two flat metal plates and

425

00:13:01,190 --> 00:12:58,720

then the active part the plunger that

426  
00:13:03,030 --> 00:13:01,200  
moves in and out has two concave mating

427  
00:13:04,710 --> 00:13:03,040  
surfaces on it so you're literally

428  
00:13:06,310 --> 00:13:04,720  
pushing those two metal contacts

429  
00:13:08,629 --> 00:13:06,320  
together and then pulling them back

430  
00:13:10,710 --> 00:13:08,639  
apart so the act of pushing them in and

431  
00:13:12,710 --> 00:13:10,720  
and the the mechanical force of doing

432  
00:13:16,069 --> 00:13:12,720  
that knocks any debris that's built up

433  
00:13:18,310 --> 00:13:16,079  
on that metallic contact off

434  
00:13:22,470 --> 00:13:18,320  
yes yes

435  
00:13:25,910 --> 00:13:24,710  
hi mark kirkman interspace news uh some

436  
00:13:27,509 --> 00:13:25,920  
of us were out of the pads we missed

437  
00:13:29,269 --> 00:13:27,519  
part of your briefing uh

438  
00:13:31,190 --> 00:13:29,279

if you covered it or if not could you

439

00:13:32,710 --> 00:13:31,200

explain what you'll do if you i know you

440

00:13:34,230 --> 00:13:32,720

don't expect to see a reoccurrence but

441

00:13:35,910 --> 00:13:34,240

if you do see the same transit even

442

00:13:37,350 --> 00:13:35,920

though it's within whibits what's the

443

00:13:39,030 --> 00:13:37,360

plan during the count if you see that

444

00:13:42,389 --> 00:13:39,040

again

445

00:13:44,389 --> 00:13:42,399

um yeah we talked about that

446

00:13:46,150 --> 00:13:44,399

no we didn't um so yeah we talked that a

447

00:13:47,430 --> 00:13:46,160

little bit the team has talked that we

448

00:13:49,189 --> 00:13:47,440

didn't bring it up at the mmt too much

449

00:13:51,030 --> 00:13:49,199

but basically the plan would be we we

450

00:13:52,870 --> 00:13:51,040

talked about it um

451

00:13:54,710 --> 00:13:52,880

the the the thing that uh that we

452

00:13:55,829 --> 00:13:54,720

discussed today that was kind of the new

453

00:13:58,230 --> 00:13:55,839

data we didn't have from yesterday is

454

00:14:00,389 --> 00:13:58,240

that these momentary voltage dips

455

00:14:02,870 --> 00:14:00,399

uh of a couple volts on this composite

456

00:14:04,870 --> 00:14:02,880

voltage at the controller itself are not

457

00:14:06,790 --> 00:14:04,880

as uncommon as we thought they were and

458

00:14:08,870 --> 00:14:06,800

that they're actually not regular but

459

00:14:10,870 --> 00:14:08,880

they're they can be tied to an event in

460

00:14:13,829 --> 00:14:10,880

the ac feed upstream or they can be tied

461

00:14:15,269 --> 00:14:13,839

to a controller uh issue itself so so

462

00:14:18,150 --> 00:14:15,279

from that standpoint seeing another

463

00:14:19,509 --> 00:14:18,160

little anomaly of of a current uh or a

464

00:14:20,629 --> 00:14:19,519

voltage drop-off

465

00:14:22,150 --> 00:14:20,639

might not be

466

00:14:23,350 --> 00:14:22,160

a reason to pause we are most certainly

467

00:14:25,030 --> 00:14:23,360

going to talk about it make sure we

468

00:14:26,949 --> 00:14:25,040

understand it that it doesn't violate

469

00:14:29,030 --> 00:14:26,959

any of the the understanding we have as

470

00:14:30,389 --> 00:14:29,040

we go into this anomaly and that nothing

471

00:14:32,069 --> 00:14:30,399

in those conditions have changed

472

00:14:34,389 --> 00:14:32,079

but it's not an automatic

473

00:14:35,509 --> 00:14:34,399

punt and and run with your hair on fire

474

00:14:37,750 --> 00:14:35,519

we're going to talk through just like we

475

00:14:39,110 --> 00:14:37,760

would any other problem so we did get a

476  
00:14:41,350 --> 00:14:39,120  
a little further today to understand

477  
00:14:43,910 --> 00:14:41,360  
again the concept of of

478  
00:14:45,750 --> 00:14:43,920  
of what the signature likely is now if

479  
00:14:47,750 --> 00:14:45,760  
we saw something that showed us that

480  
00:14:48,710 --> 00:14:47,760  
that this contact is degrading and that

481  
00:14:50,150 --> 00:14:48,720  
the uh

482  
00:14:52,949 --> 00:14:50,160  
the the connection that the circuit

483  
00:14:54,949 --> 00:14:52,959  
breaker is making is now becoming uh no

484  
00:14:56,949 --> 00:14:54,959  
longer a valid solid connection that

485  
00:14:58,629 --> 00:14:56,959  
would violate what we kind of used as

486  
00:15:01,590 --> 00:14:58,639  
our is our rationale today and we would

487  
00:15:03,550 --> 00:15:01,600  
most certainly stop and talk about that

488  
00:15:06,870 --> 00:15:03,560

that's all the time we have for the

489

00:15:08,870 --> 00:15:06,880

sts-133 status briefing

490

00:15:11,910 --> 00:15:08,880

launch coverage will begin tomorrow

491

00:15:13,509 --> 00:15:11,920

morning at 6 00 a.m eastern time live on

492

00:15:15,629 --> 00:15:13,519

nasa television with the beginning of

493

00:15:18,150 --> 00:15:15,639

tanking for more information on the

494

00:15:20,870 --> 00:15:18,160

sts-133 mission and crew please visit