1
00:00:08,100 --> 00:00:04,070
Upbeat music.

2
00:00:08,120 --> 00:00:12,170
We are here at Vandenberg Air Force Base in California where a large team of engineers

3
00:00:12,190 --> 00:00:16,200
and scientists are getting ready to launch the NPOESS Preparatory Project,

4
00:00:16,220 --> 00:00:20,210
better known as the NPP satellite. It is the Nation's first attempt

5
00:00:20,230 --> 00:00:24,280
to combine weather and climate observations on the same platform.

6
00:00:24,300 --> 00:00:28,310
It's also here at Vandenberg where the NPP spacecraft is sitting on top

7
00:00:28,330 --> 00:00:32,390
of Delta II rocket and we are going to take you inside, talk to the project scientist

8
00:00:32,410 --> 00:00:36,430
about what this mission means and follow the engineers in their final steps

9
00:00:36,450 --> 00:00:40,440
leading to countdown. What are the goals of the NPP mission?

10
00:00:40,460 --> 00:00:44,480
James Gleason: We want to continue the scientific measurements that NASA satellites have been

11
00:00:44,500 --> 00:00:48,510
making over the past decade and improved the

12
00:00:48,530 --> 00:00:52,600
that will be used for weather forecasting. Malissa Reyes: What's special about launching

13
00:00:52,620 --> 00:00:56,660

here from Vandenberg? James Gleason: Vandenberg is a very special place, it's

14
00:00:56,680 --> 00:01:00,680
where we can do the polar orbiting launches, we can launch South

15
00:01:00,700 --> 00:01:04,750
into a safe zone over the ocean. Malissa Reyes: Why a polar orbit?

16
00:01:04,770 --> 00:01:08,770
view the entire Earth twice a day, which is very important for our measurements.

17
00:01:08,790 --> 00:01:12,840
Malissa Reyes: Describe what we are seeing here in the tower. Michael Marosco: Ok the

18
00:01:12,860 --> 00:01:16,890
building on the left is the Mobile Service

19
00:01:16,910 --> 00:01:20,900
Tower or MST. It's a 177 feet tall

20
00:01:20,920 --> 00:01:24,970
and its on wheels. Once the tower is retracted, you'll see the rocket

21
00:01:24,990 --> 00:01:29,010
in all its glory. It's very exciting.

22
00:01:29,030 --> 00:01:33,120
The building on the right is the fixed umbilical tower.

23
00:01:33,140 --> 00:01:37,160
That provides the air conditioning, and other umbilicals over

24
00:01:37,180 --> 00:01:41,180
to the vehicle that are required all the way through T0.

25
00:01:41,200 --> 00:01:45,250
Malissa Reyes: What's going to be witnessed here on the ground after the count reaches zero?

26
00:01:45,270 --> 00:01:49,290
Michael Marosco: Aaah, you see the engines ignite, the rocket lifts

27
00:01:49,310 --> 00:01:53,400
off very quickly, after about two minutes, the rocket is pretty much out of sight.

28
00:01:53,420 --> 00:01:57,460
It goes really quick. This is Mobile Service

29
00:01:57,480 --> 00:02:01,480
Tower level 2. This is an 8-foot diameter tank.

30
00:02:01,500 --> 00:02:05,550
The Delta II carries ten thousand gallons of RP-1 fuel.

31
00:02:05,570 --> 00:02:09,600
So, this is what a ten thousand gallon fuel tank looks like.

32
00:02:09,620 --> 00:02:13,620
We are standing now on the level C level of the Mobile

33
00:02:13,640 --> 00:02:17,690
Service Tower. The forward end of the solid rocket motors.

34
00:02:17,710 --> 00:02:21,710
They are 40-inch diameter and each solid motor is 42,5 feet long.

35
00:02:21,730 --> 00:02:25,780
These solid motors each put out a

36
00:02:25,800 --> 00:02:29,820
hundred thousand pounds of thrust. Underneath in the red blanket

37
00:02:29,840 --> 00:02:33,830
is the rocket RS-27A main engine and that puts

38
00:02:33,850 --> 00:02:37,890

out about 250 thousand pounds of thrust.

39
00:02:37,910 --> 00:02:41,920
So, in this configuration at lift off

40
00:02:41,940 --> 00:02:46,010
850 thousand pounds of thrust.

41
00:02:46,030 --> 00:02:50,040
These motors will be jettisoned after about a minute and a half, two minutes of flight

42
00:02:50,060 --> 00:02:54,070
and they will end up in the bottom of the ocean. Malissa Reyes: We are here outside the

43
00:02:54,090 --> 00:02:58,140
Mission Director Center and we are joined by Jerry Nagy, the NPP Launch Operations

44
00:02:58,160 --> 00:03:02,170
Manager from Goddard Space Flight Center and Jerry, what happens here on the day of

45
00:03:02,190 --> 00:03:06,240
Jerry Nagy: Ok, well, this is really the hub of communication where

46
00:03:06,260 --> 00:03:10,300
the various management organizations from United Launch Alliance,

47
00:03:10,320 --> 00:03:14,320
NASA Kennedy Space Flight Center, NASA Goddard Space Flight Center, and

48
00:03:14,340 --> 00:03:18,390
Ball Aerospace will take inputs from all the people that are supporting the launch and give the

49
00:03:18,410 --> 00:03:22,430
ok to actually launch the rocket. Malissa Reyes: How far are we from the tower right now?

50
00:03:22,450 --> 00:03:26,510
Jerry Nagy: We are approximately 12 miles from the launch pad. Ken Schwer: This is where the entire launch

51
00:03:26,530 --> 00:03:30,570
management team at the night of launch assembles. Each one of these

52
00:03:30,590 --> 00:03:34,590
rows have what we call back rooms so we have people in

53
00:03:34,610 --> 00:03:38,670
other parts of the facility in Vandenberg who are doing the engineering aspect of

54
00:03:38,690 --> 00:03:42,710
what they are doing so this all feeds together, we integrate and as we get closer to

55
00:03:42,730 --> 00:03:46,810
launch, each one of these groups has a person who says

56
00:03:46,830 --> 00:03:50,870
Go! Malissa Reyes: So how do the people in this room prepare for launch day?

57
00:03:50,890 --> 00:03:54,890
Ken Schwer: We actually have an event called a Mission Dress Rehearsal. So, we are all here, we have the co

58
00:03:54,910 --> 00:03:58,960
script, and then there is a team that has developed simulated anomalies for us.

59
00:03:58,980 --> 00:04:03,010
And each one of those groups needs to try to work through those and

60
00:04:03,030 --> 00:04:07,010
get them back to a “go” criteria and then continue on. Tim Dunn: …it is fully operational

61
00:04:07,030 --> 00:04:11,060
again. Malissa Reyes: So, the final Go! is given in this room? Ken Schwer: Yes,

62
00:04:11,080 --> 00:04:15,090
the final Go! is given in this room. Malissa Reyes: How do you think it is going to feel for you

63
00:04:15,110 --> 00:04:19,170

emotionally when you actually see that reaching into orbit? Ken Schwer: The safest

64
00:04:19,190 --> 00:04:23,220
place for a satellite is in orbit. The emotions of making sure it's finally in its home,

65
00:04:23,240 --> 00:04:27,230
it finally gets to do its job, it is hard to describe.

66
00:04:27,250 --> 00:04:31,310
What makes the aerospace industry so exciting is that one day

67
00:04:31,330 --> 00:04:35,340
a person can have a concept to meet our Nation's needs, which leads

68
00:04:35,360 --> 00:04:39,390
to many dedicated people working for quite a few years

69
00:04:39,410 --> 00:04:43,410
through the entire development until one day a satellite

70
00:04:43,430 --> 00:04:47,490
like NPP is ready for launch.

71
00:04:55,560 --> 00:04:51,510
Closing music.