

# NASA hopeful repairs will permit Sunday launch

March 14 2009, By MARCIA DUNN , AP Aerospace Writer



Space Shuttle Discovery is seen on pad 39A at the Kennedy Space Center, Fla Saturday, March 14, 2009. Space Shuttle Discovery's seven member crew are scheduled to lift off Sunday evening on a mission to the International Space Station. (AP Photo/Terry Renna)

(AP) -- NASA is unsure what caused the hydrogen gas leak that prevented space shuttle Discovery from flying, but nonetheless will attempt another launch Sunday.

Shuttle managers are hopeful that repairs at the [launch](#) pad have solved the problem.

There's "a potential risk" that the leak will recur, said Mike Moses, chairman of the mission management team. That would mean yet another delay for the international [space station](#) construction mission, which already is running more than a month late.

"We did everything we could, which is to replace all

the hardware," Moses told reporters Saturday.

"Yeah, we'd like to have that root cause, because now you'd feel comfortable. But I'm still going to sleep just as good tonight knowing that our chances tomorrow are really good that we did lick this problem."

NASA has until Tuesday to launch Discovery before having to wait for a [Russian Soyuz rocket](#) that is set to blast off to the space station March 26.

The latest delay occurred Wednesday, just hours before liftoff, as NASA was almost finished loading Discovery's [external fuel tank](#). Hydrogen gas began leaking where a vent line hooks up to the tank.

NASA replaced that hookup and a pair of seals and, in fact, fell a few hours behind in countdown preparations because of an assembly issue. Nothing obvious was wrong with the removed parts. One of the seals was slightly rolled up along the edge, and the hookup itself was discolored in one spot. But neither of those issues may have caused the leak, said launch director Mike Leinbach.

"I just don't have a smoking gun," Leinbach said. He acknowledged it's a little unusual to continue the countdown in such a case, but he stressed it's not a launch safety issue because the launch will be canceled again if there's a leak.

Discovery's previous delays - which have stretched over month - were caused by hydrogen [gas valves](#) in the [shuttle](#) engine compartment. NASA ordered extra tests and kept replacing the valves to make sure they were safe to fly. One of these valves broke on the last shuttle launch in November.

Waiting to fly since mid-February, Discovery and seven astronauts are set to carry up one last set of solar wings for the space station.

The mission was intended to last 14 days and

include four spacewalks. But now it's down to 13 days and three spacewalks at best. That's because Discovery needs to be gone by the time the Soyuz blasts off from Kazakhstan with a fresh space station [crew](#).

If Discovery isn't flying by Tuesday night, then it will have to wait until April.

NASA's space station program manager, Mike Suffredini, said the first spacewalk is essential for installing the new solar wings. The remaining spacewalks - mostly preparatory work for future missions - could be handed off to the station crew after Discovery leaves.

Suffredini said it's also critical the shuttle drop off a spare urine processor for the space station's water-recycling system, and a flusher for a water dispenser that's showing a high bacteria count.

The urine processor up at the space station needs to be replaced because it's not working properly, and engineers want to flush iodine through the water dispenser to kill any bugs.

This new recycling system - which turns urine and condensate into drinking water - is a keystone in NASA's plan to double the size of the space station crew in another two months.

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On the Net:

NASA: <http://spaceflight.nasa.gov>

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APA citation: NASA hopeful repairs will permit Sunday launch (2009, March 14) retrieved 9 December 2022 from <https://phys.org/news/2009-03-nasa-sunday.html>

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