

Bird's eye view of Chernobyl plant

► REACTOR, From A1

The channels were cut off apparently to prevent radioactive seepage into the nearby cooling pond.

The satellite images were created by combining three spectral bands from the infrared portion of the satellite's sensor bands — the Thematic Mapper. The Thematic Mapper can gather data in three visible light wavelengths and four infrared wavelengths.

The hot spot is seen in two infrared bands on the April 29 image as a very bright blue square at the center of the image. Heat is reflected on satellite photos as white spots, and the disappearance of the white dot May 8 indicates the reflected heat has been reduced.

Preliminary evaluation of thermal data also shows that the cooling pond next to the reactor was uniform in temperature in the April 29 photo, although still warmer than the Pripjat River running beside it.

It's another indication to scientists that the wrecked plant has stopped functioning.

Under normal operations, the water, circulating counterclockwise around the pond, gradually darkens in color as it cools. The April 29 image indicates no warm water is being pumped into the pond because no temperature change is evident.

By May 8, the overall temperature of the cooling pond has dropped further and more closely matches the Pripjat.

Future U.S.G.S satellite photos of the area may help provide evidence of damage to vegetation around Chernobyl. The reactor is located in the Soviet Union's agricultural heartland.

Experts do not believe crop damage from radiation in soil and water will show up on the photos unless it is severe, but agriculture activity such as plowing and planting (or the lack of it) could be easily monitored by the satellites.

The Landsat 5 satellite that recorded the images was launched March 1984 and is one of two U.S.G.S. satellites orbiting at 438 miles. Three other Landsat satellites, which orbited at 570 miles, are now decommissioned.

All Landsat operations are controlled by EO-SAT from a command center at Goddard Space Flight Center in Greenbelt, Md.

Data from the satellites are transmitted either directly to Goddard or through a relay satellite in a stationary orbit above the earth. Goddard processes the Thermal Mapper data, using black and white film negatives to produce images with natural color, as shown here.

The Chernobyl images represent a small 16-mile portion of the entire 100-square-mile satellite scene.