



November 18, 2010

## **New Satellite Imagery of Yongbyon Shows Construction Progress on Experimental Light Water Reactor**

ISIS has obtained commercial satellite imagery from DigitalGlobe of the Yongbyon nuclear site in North Korea taken on November 4, 2010. The imagery shows that construction activity at the site of the destroyed cooling tower<sup>1</sup> for the disabled 5 MWe reactor is progressing (see figure 1). The frame of a large building can now be seen, where [ISIS reported](#) that commercial satellite imagery from September 29, 2010 showed only excavation (see figure 2). Dr. Siegfried Hecker and Ambassador Jack Pritchard, upon their return from a recent visit to Yongbyon, [reported](#) that North Korea is building a 25-30 megawatt-electric (MWe) experimental light water reactor at the Yongbyon nuclear site. Dr. Hecker informed ISIS that the new construction seen in the satellite imagery is indeed the construction of the experimental light water reactor.

The November 4, 2010 imagery shows a rectangular structure being built. At least two cranes are visible in the imagery (see figure 1). In constructing the experimental light water reactor at the site of the destroyed cooling tower, North Korea may intend to utilize existing infrastructure for the new reactor. For example, it could use water piping for the secondary cooling system of the 5 MWe reactor that remained after the disablement process of this reactor.

ISIS estimates that a 25-30 MWe light water reactor would require several tones of low enriched uranium (LEU) in the core and on order of one tonne of LEU per year as reloads. These values could vary depending on the design of the reactor and whether it will be optimized for electricity production or weapon-grade plutonium production for weapons.

ISIS also estimates that North Korea would need a pilot scale uranium enrichment plant with on order of 1,000 centrifuges in order to produce this amount of LEU per year. On October 8, 2010, ISIS [released a report](#) assessing uranium enrichment in North Korea. The report found that “the data support that North Korea has the capability of building, at the very least, a pilot plant.”

Dr. Hecker plans to release a report next week on the findings from his trip.

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<sup>1</sup> The cooling tower for the disabled 5MW reactor was demolished in 2008 during the implementation of disablement measures.

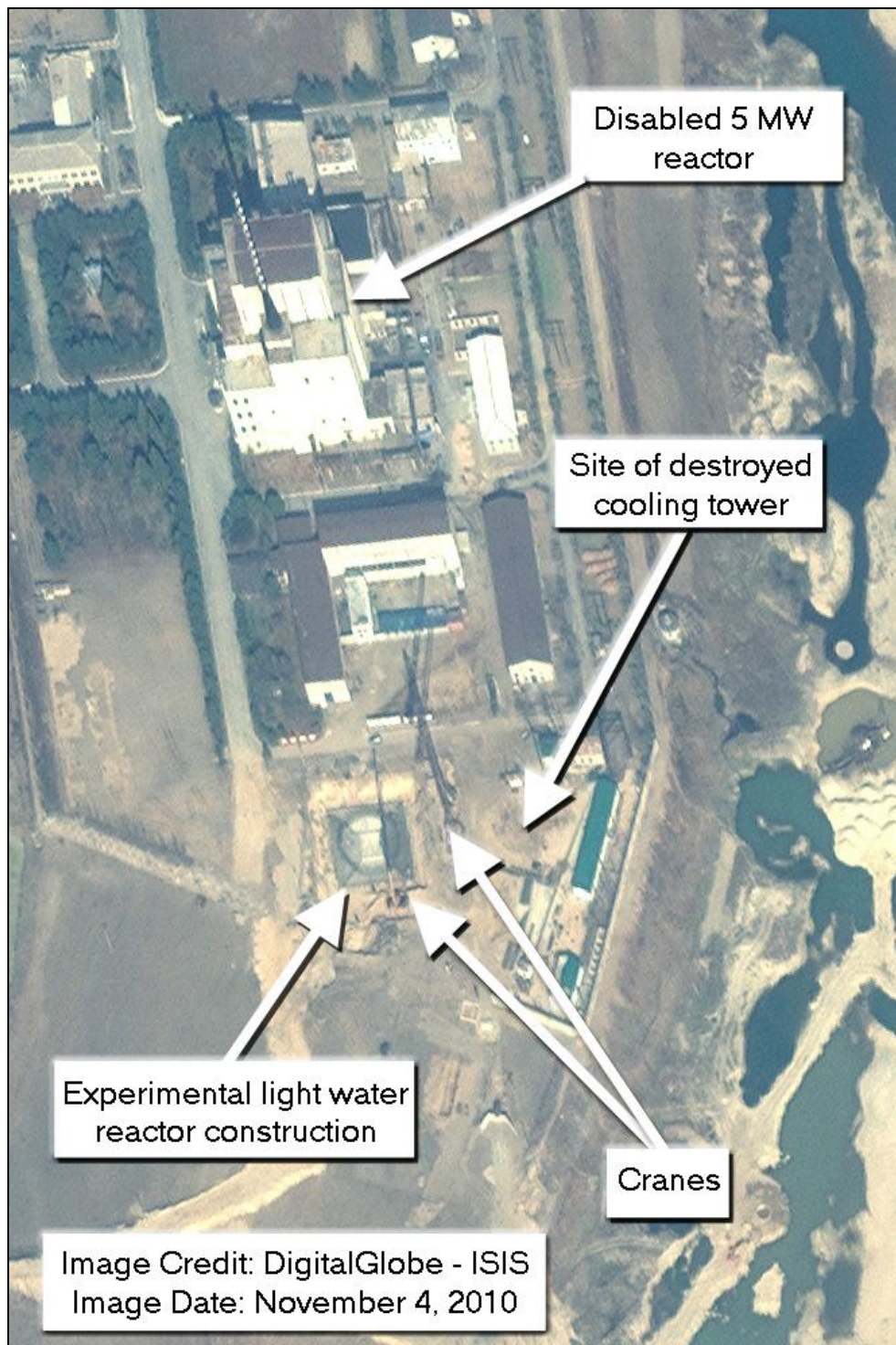


Figure 1. November 4, 2010 DigitalGlobe satellite image of the Yongbyon nuclear site showing continuing construction at the site the destroyed cooling tower for the original 5MW reactor. Dr. Siegfried Hecker informed ISIS that this is the same site where construction of a new experimental light water reactor is taking place.



Figure 2. September 29, 2010 DigitalGlobe satellite image of the Yongbyon nuclear site showing excavation activity in the area of the destroyed cooling tower.