

Captions for photos from North Korea's nuclear facility in Yongbyon. Photos taken Feb. 14, 2008 by Siegfried Hecker, co-director of Stanford's Center for International Security and Cooperation, and W. Keith Luse, staffer for Sen. Richard Lugar, R-Indiana.

The 5 Megawatt (electric) nuclear reactor in Yongbyon and cooling tower:

0107 – (Hecker) "The winch room of the reactor showing the winch for moving the fuel baskets and an electronics cabinet containing U.S. and IAEA electronics monitoring the discharge of the spent fuel. The radiation monitoring detector, designed and built by Los Alamos National Laboratory, is located on the other side of the far wall and monitors the passage of every fuel rod being discharged from the core."

0114 – (Hecker) Cooling tower for 5 MW reactor

0115 –(Hecker) A view of the ground level of the cooling tower showing all structures having been removed.

0116 – (Hecker) A view up at the empty interior of the cooling tower. All of the cooling and evaporative mechanisms have been disassembled and removed.

Reprocessing Plant:

0134 – (Hecker) Right. Location where the shearing machine was formerly located. The shearing machine removed the fuel rod end caps and split the MAGNOX cladding from the fuel rod core prior to fuel dissolution. (Minus-1 level of the reprocessing plant.)

Left: Orifice where the removed shearing machine cutter knife entered the hot cell.

0131 – (Hecker) Location where two cranes (up-down, left-right) were formerly located. These cranes transferred the spent fuel basket into the receiving hot cell and positioned the basket at the shearing station. (Minus-1 level of reprocessing plant.)

0133 – (Hecker) Location where the receiving cell isolation door actuator mechanism was formerly located. The isolation door separates the receiving hot cell from the transfer tunnel from the spent fuel receiving building. (Minus-1 level of reprocessing plant.)

0122 (Hecker) -- Location where a motor mechanism was formerly located that operated a trolley that transferred the spent fuel basket from the receipts building into the reprocessing plant. (Spent Fuel Receiving Building.)

0128 – (Hecker) Stored equipment removed from reprocessing plant.

Fuel fabrication facility

0139 – (Hecker) Disabled equipment in storage at the fuel rod fabrication facility. This photo shows four spare fuel rod casting vessels in storage and dissolver tanks.

0140 – (Hecker) DPRK official in front of refractory bricks and mortar dust removed from the seven uranium metal production furnaces awaiting disposal as radioactive waste. (Metal ingot production building at the fuel rod fabrication facility.)

2039 - (Luse) Empty furnace pits for the seven uranium metal production furnaces.

0158 (Hecker) – Location of one of the removed vacuum induction casting furnaces that shaped uranium metal ingots into fuel rod cores in preparation for machining and cladding the cores into fresh fuel rods. (Fuel rod casting and shaping building at the fuel rod fabrication facility.)

2037 – (Luse) Siegfried Hecker examining machining lathes removed from machine shop.

2051 – (Luse) Empty machine shop from which lathes have been removed. Exhaust ducts are shown still in place.

0168 – (Hecker) Nearly five tons of UO₃ (an intermediate product in the fabrication of uranium metal) collected from fuel fabrication facility and stored in plastic bags monitored by IAEA cameras.

0163 – (Hecker) Empty pits which contained three uranium ore concentrate dissolver tanks, now removed and stored.

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