Background
Westinghouse’s rigid pole-handling system helps nuclear utilities reduce outage time and exposures by allowing maintenance workers to disassemble and reassemble reactor vessel internals underwater during a refueling outage. Developed in Sweden and in use throughout the United States, the system offers utilities an underwater or dry-tooling system capable of easy, precise long-distance operations in the reactor cavity and reactor vessel. The system can be adapted to any over-cavity equipment, such as refuel and/or auxiliary platforms, thereby enhancing the use of existing service tooling.

Description
The rigid pole-handling system is a long-handled tool supported from the refueling platform. The pole length can be adjusted by adding (or subtracting) various length poles to fit the job at hand. The rest of the system includes an assembly station, a storage station and a variety of end adapters for the poles. The adapters convert the poles for use with the overhead crane and existing tooling. The base supply of equipment will allow the disassembly and reassembly of the reactor internals for refueling operations.

The Westinghouse rigid pole-handling system is part of the Westinghouse WETLIFT 2000™ reactor disassembly/reassembly system. The WETLIFT 2000 system consists of three major components:

- Lifting components
- Rigid pole-handling system
- Main steam line plugs and/or tooling
**Benefits**
The Westinghouse rigid pole-handling system offers improved handling by providing precise horizontal, vertical and rotational positioning of all important reactor service tools. Operations can be accomplished by a single worker, and time-consuming swinging motions are eliminated. Separate delivery of the tooling to the cavity is not required. Poles remain rigid throughout the operation, thereby providing consistent, trouble-free performance.

- Improved Safety – Cavity entries are reduced because operations can be performed from the refuel platform. The risk of falling is also reduced. Less time is spent in dressout, and less support is required from health physics (HP) and cranes. Tools are never supported by handheld cables and are, therefore, not free to swing.

- Reduced Exposure – Dose is reduced by distancing the operator from the work. The pole system allows the work to be performed underwater, further reducing the dose to nearly zero, and by eliminating cavity entry, the operators work in a cooler environment. Further more, electropolished parts are easily decontaminated.

- Adaptability – The pole system is adaptable to any over-cavity equipment such as refuel and/or auxiliary platforms. The standard system can be added to an existing refuel platform with little or no modification. The pole adapters will enhance the use of existing tools or allow on-the-spot adjustments to cover unforeseen circumstances.

**Experience**
Our 20 years of field experience have provided a dependable system that is easy to use. Numerous systems are in use in Sweden, Finland and the United States. Operator learning time is short and downtime is almost nonexistent.