Nondestructive Examination Services

Bottom Evaluation and Suction Tool

Background

The bottom evaluation and suction tool (BEST) was developed jointly by WesDyne and the Oskarshamn nuclear power plant in Sweden for inspection and cleaning of the vessel bottom head. The BEST tooling was developed as a response to a need for visual inspection as well as possible suction cleaning of the vessel bottom.

Description

The tooling consists of a camera wagon carrying a pan-and-tilt camera with integrated lights as well as a hose from an external suction pump. The camera wagon is attached to a handling rod adapter via a large-size energy chain, capable of housing the camera cable as well as the hose from the pump unit.

The suction flow is channeled via a nozzle in the bottom of the camera wagon. Depending on where the tool is used (either on the steeply sloping periphery of the bottom head or in areas with less curvature), different flow restrictors are used in order to maximize the suction effect.

The whole unit is lowered to the bottom and controlled using handling rods from the service bridge.

Technical Data

Weight (excluding camera or hose)	5 kg (approx.)
LxWxH (including N30 camera)	475 x 109 x 159 mm
Camera pan range (N30 model)	No limit*
Camera tilt range (N30 model)	No limit*
Hose O.D. (typical)	055 – 63 mm

* Camera field-of-view is limited by wagon structure in certain positions; no mechanical limit due to wagon design when used with an Ahlberg N30 camera.

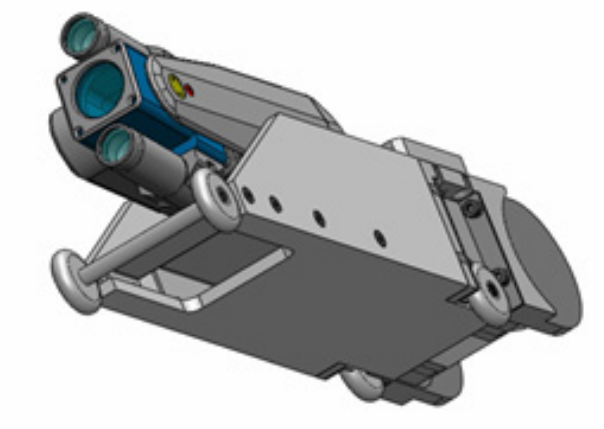
Benefits

BEST enables cleaning and visual inspection of the reactor bottom in one package. This lowers overall time and gives a flexible solution for varied demands on the scope of works.

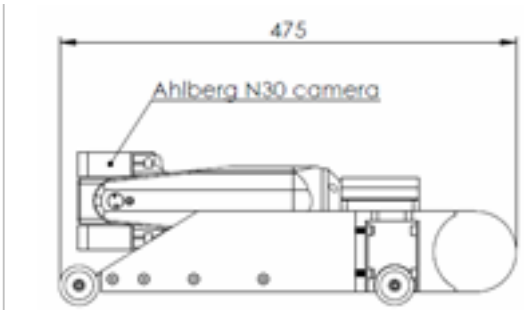
Experiences

The BEST was first deployed the spring of 2009 and is presently being considered for multiple other cleaning activities.

ASEA ATOM BWR layout



The BEST as seen from underneath



The BEST dimensions(mm)

WesDyne is the nondestructive inspection branch of Westinghouse and a leading supplier of mechanized nondestructive examination (NDE) products for all inspection needs worldwide. As such providing turnkey and one-off-type solutions with a focus on the nuclear market. WesDyne's expertise spans all aspects of remote and mechanized inspections, from problem analysis and solutions generation to development and manufacturing to field deployment of personnel and equipment. Inspection capabilities cover all key NDE areas such as ultrasonic, visual, eddy current, magnetic particle, dye penetrant and X-ray.

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