

Submersible Visual Inspection Platform

Background

The submersible visual inspection platform (SVIP) is designed and manufactured by **WESDYNE®**, a subsidiary of Westinghouse. The SVIP performs visual inspections (VTs) of internal components/objects in nuclear power plants.

Description

The SVIP is placed in position either on top of the object to be inspected or beneath it.

Depending on the type of object to be inspected (such as steam dryer or shroud head), the bottom plate on the equipment is configured differently for easy application and secure positioning.

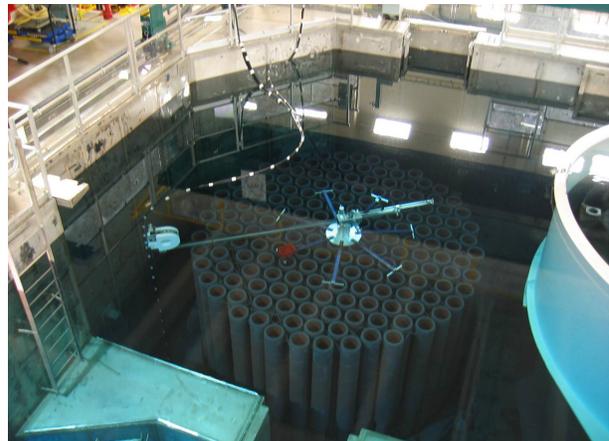
The SVIP is capable of motion along three axes: rotation around a central (vertical) axis, linear movement along a radial axis and vertical movement (upward/downward) of the inspection equipment (e.g., cameras).

A high degree of documentation and inspection precision is possible due to the positioning feedback available from the mechanized movements used for positioning of the inspections devices (e.g., cameras). The SVIP is designed to carry cameras qualified for enhanced visual inspection (e.g. ASME VT1) for performance of VT in-service inspections (ISIs).

The SVIP is also designed for optimal buoyancy characteristics to make the equipment as efficient and safe as possible. For an illustration of application, see the picture showing the SVIP on top of a shroud head with the camera extended.

Benefits

The stand-alone capability makes the SVIP minimally dependent on lifting and positioning devices (such as service bridges and cranes) during the inspection progress, which makes parallel outage activities possible. By allowing for parallel activities in the vessel during VT of internals, there is a significant potential for reducing the critical-path time during an outage. This patented solution provides an automated and position feedback solution that affords better precision in identifying defects. In addition, the repeatability of the inspection results is also greatly improved compared to the previous manual inspection approach.



SVIP on top of shroud head performing qualified visual in-service inspection

Technical Data

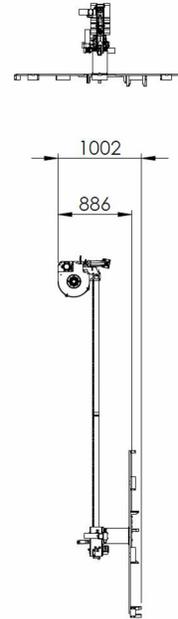
Weight in air (approx.)	100 Kg
LxWxH (max)	4425x2079x1002 mm
Range, circumferential (φ)	No limit
Radial (R) stroke*	3,180 mm
Rotation speed (max)**	1 rpm
Inspection camera (typical)	Ahlberg N30
High-radiation area use	Yes, depending on camera type/model

* From center of platform to beam end; radial stroke depends on beam selection (several lengths available)

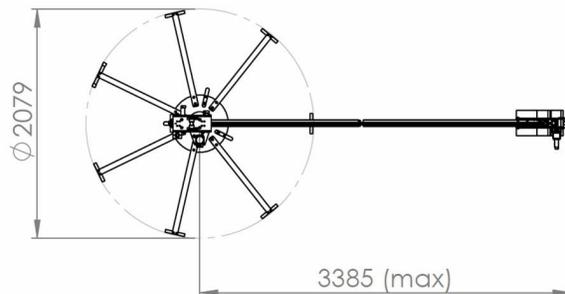
** Depending on application/object to be inspected

Experience

Since its introduction in 2009, the SVIP has been used at boiling water reactor plants in Sweden, Finland and the United States.



SVIP dimensions (mm)



Renderings of SVIP (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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