

Westinghouse Parts Business

HYTORC Bolting Solutions

The Westinghouse Solution

The Westinghouse Parts Business is excited to announce an agreement with HYTORC to provide turnkey bolting solutions to the nuclear market. Westinghouse is the exclusive supplier to the nuclear industry for safety-related and ASME Section III applications.

HYTORC Nuts and Washers allow for significantly reduced installation time and corresponding radiation dose in the field. The compact nut design applies pure tensile load to bolts, avoiding thread damage and galling which can introduce additional delays to outage-critical operations. The design also eliminates the need for backup wrenches and reaction arms, eliminating pinch points and improving worker safety.

Customer Benefits

- Significantly reduction in installation time and associated radiation dose
- Eliminates galling while increasing load accuracy
- Eliminates the need for a reaction arm, improving worker safety by reducing risk of pinch point and line of fire injuries
- Both HYTORC Nut and Washer systems interface with existing bolting systems
- Custom solutions are available to accommodate unique applications

Trusted Partners in Nuclear

Westinghouse

- Industry leader for the supply of nuclear parts and OEM for over 50% of the nuclear fleet
- Extensive Commercial Grade Dedication experience and Quality program oversight
- Turnkey solutions, including developing full engineering change packages

HYTORC

- HYTORC brings over 55 years of experience supporting industrial bolting in nuclear and non-nuclear applications



No Galling

100% elimination of bolt galling



Improved Safety

No pinch points



Pure Tensile Loads

Made to withstand high tension and shear load

<https://info.westinghousenuclear.com/westinghouse-parts-business>

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Westinghouse Non-Proprietary Class 3



Westinghouse Parts Business

Reactor Coolant Pump Motor Washers

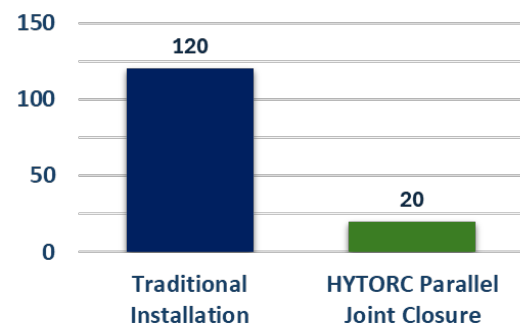
A nuclear utility installed HYTORC washers on their RCP motor 1-1/4" diameter hold down bolts, reducing disassembly time from 2 hours to 20 minutes. For assembly, all passes on 24 bolts were completed in less than 20 minutes, compared to previous 3 hours. These reductions in installation time also included a corresponding reduction in radiation dose.

Pressurizer Manway Bolting System

Another nuclear customer installed HYTORC nuts on pressurizer manways and updated maintenance procedures to use a parallel joint closure method to apply 100% tool coverage to tighten and loosen all nuts simultaneously. This simultaneous tightening reduced individual tool placements from 120 to 20 for removal of the manway while eliminating the potential for warpage of the cover plate.

This method resulted in an 80% reduction in installation time for this application, cutting torquing time from 4 hours to 20 minutes while simultaneously reducing worker radiation dose.

Manway Removal Tool Placements



The following analysis was performed by a nuclear customer in 2017 based on historic turbine maintenance times and proven disassembly / reassembly times using HYTORC hardware, verified in outage training conditions. Potential savings in both man-hours and overall duration was proven to be 75% on average.

Maintenance Scope		Man-Hours		
		Traditional Installation	HYTORC Solution	Percentage Reduction
Operation #1	Unbolting	120	36	70%
	Bolting	132	36	73%
Operation #2	Unbolting	32	6	81%
	Bolting	32	6	81%
Operation #3	Unbolting	24	4	83%
	Bolting	28	4	86%
Grand Total		368	92	75%

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