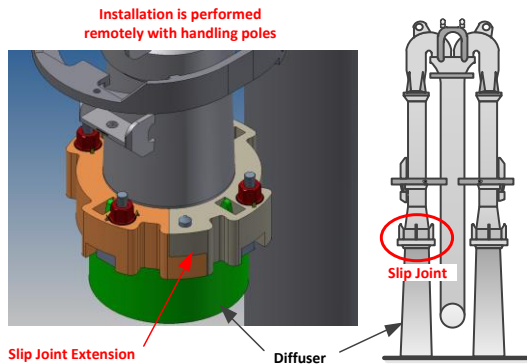


Jet Pump Slip Joint Extension

Westinghouse Jet Pump Slip Joint Extension (SJE) is the industry's first *proven* root cause solution for Flow-induced Vibration (FIV).

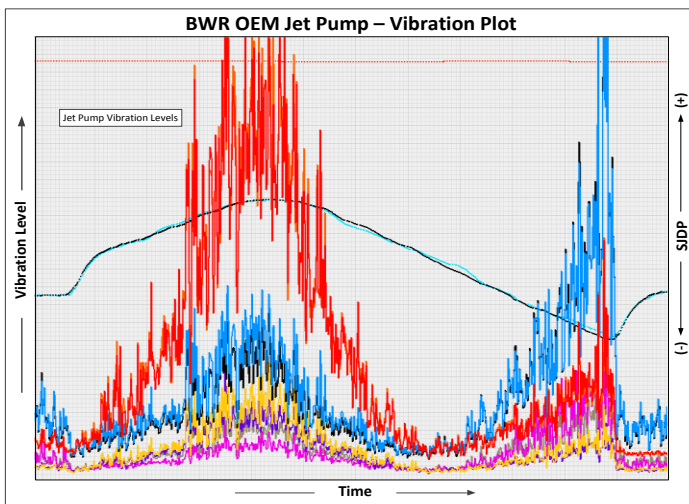
The SJE offers a low-cost, low-risk effective solution that eliminates jet pump FIV by changing the flow across the slip joint from divergent (unstable) to convergent (stable).



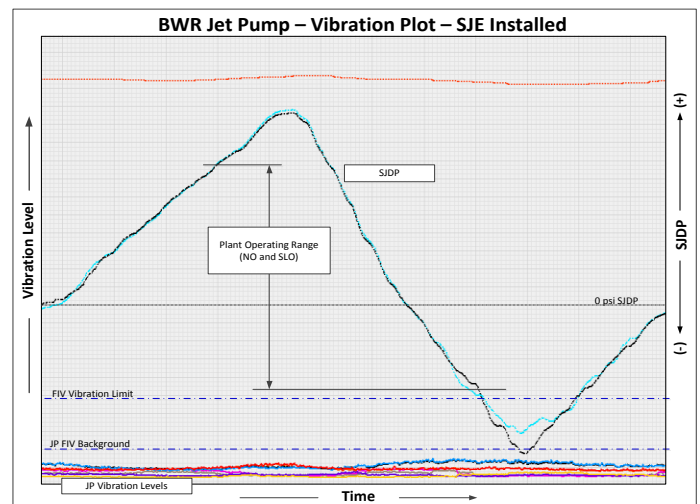
Westinghouse Slip Joint Extension (SJE)

Benefits

- **Addresses the root cause of FIV, reducing vibration to near background levels**
- Eliminates the need for existing countermeasures (“jewelry”) hanging from the components
 - Reduces foreign object risks
- Simple to install
 - No jet pump disassembly
 - No cutting or drilling
- Does not rely on physical restraint
- Does not inhibit movement or thermal growth of the jet pump
- Effective in both normal and single-loop operation
- Does not change the design basis of the jet pump



Typical Jet Pump vibration plot without corrective measures

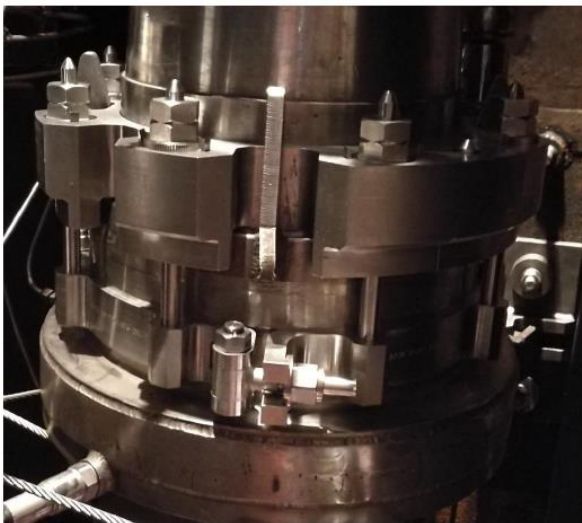


Jet Pump vibration levels to near background with Westinghouse SJE installed

Description

The SJE is a two-piece clamp device that attaches directly to the existing slip joint. It is designed with:

- Stainless steel construction
- No drilling or modifications needed to the existing slip joint
- Radial clearance to allow for movement and thermal growth during operation
- Clearance to allow leakage flow into and out of the slip joint region, depending on the differential pressure at the joint
- All fasteners locked or restrained to prevent potential foreign objects



Westinghouse Slip Joint Extension (SJE)

Additional Benefits

- Alternative to jet pump replacement
 - Mitigates effects of prior wear or slip joint damage
- Creates optimal flow through the slip joint

Delivery

Supplied as an integrated service, including:

- Hardware
- Design and qualification package
- Engineering change package
- Installation
 - Typically installed in two to four hours
 - Done by trained and qualified technicians
 - Uses standard long-handled tools
 - Requires no jet pump disassembly

Testing

- Successfully tested at Electric Power Research Institute's (EPRI) Fast Flux Test Facility (FFTF) in March 2017

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