



System Evaluation and Trunnion Rod Defect Testing at the Dalles Dam

ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS

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Response Summary:

A prototype trunnion rod test system has been designed and developed by ERDC personnel due to a Statement of Need (SON) from USCEC District personnel.

Trunnion rods are used in most dams to provide prestressing on various structural members of concrete. This includes tainter gate supporting members which combines multiple rods. The rods are typically enclosed in pipes and are surrounded with either a specific type of grease or grout.

These Trunnion rods are in some cases failing due to the various environmental conditions and mechanical properties.

The trunnion rod test system was designed and developed to detect this condition at an early state.

Period of Performance:

The on-site testing occurred between 12/10/2017 and 12/18/2017. The final report was issued to District personnel on 3/17/2018.

Benefits of the Response to the USACE Dredging/Navigation Program:

The development and evaluation of the trunnion rod test system provides the Navigation program with a tool to assist the districts in further evaluating the condition of trunnion rods at dam sites.

Deliverable:

The trunnion rod test system performance was evaluated and the condition of the trunnion rods at the Dalles dam was further evaluated using ultrasonic guided waves. The results of the testing were provided to the district personnel via an informal report 3/17/2018.

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Providing environmental and engineering technical support to the U.S. Army Corps of Engineers Operations and Maintenance navigation and dredging missions

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