Demonstration of Diagnosis technologies applied for conditions of deteriorated sewage treatment utilities using vibration data sensing and big data analysis

Demonstrated by
 Consortium between Water Agency INC., NEC Corporation, Asahi Kasei Engineering Corporation, Japan Sewage Works Agency, Moriya City and Hidaka City
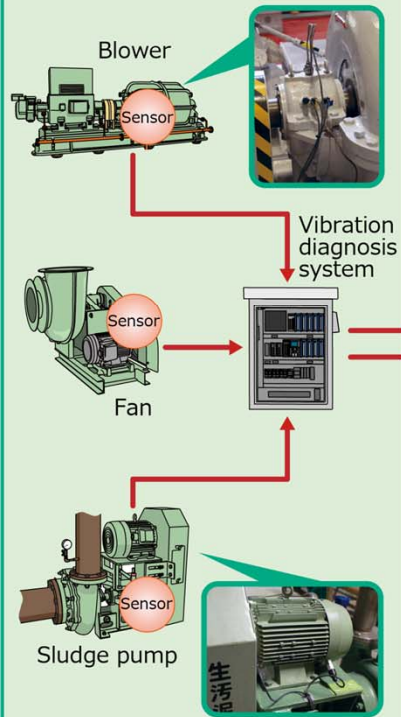
Study Site
 Moriya City WWTP ・ Hidaka City WWTP

Abstract
 To determine diagnostic criteria for rotary machine by analysis of various rotary machine vibration signal with sequential auto measuring sensor. To predict abnormality by normal / abnormal model comparison with Big Data Analysis

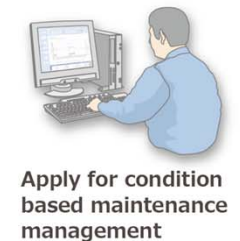Scope and Goal of Our Experimental Study
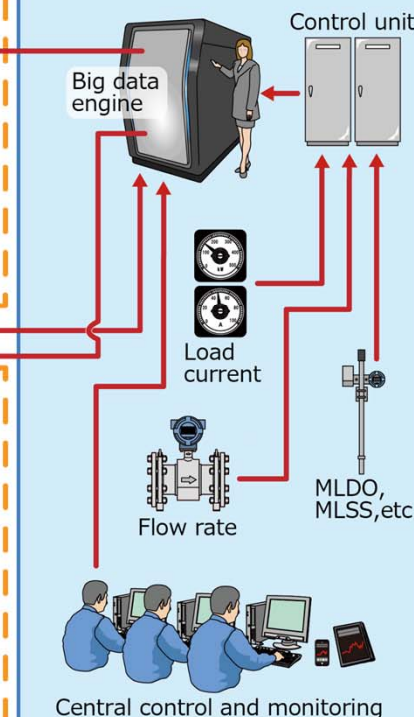
Vibration data sensing — Blower, Sensor, Fan, Sensor, Sludge pump, Sensor, Vibration diagnosis system

Apply for stock management — Maintenance and replacement planning by quantitative diagnosis

Online condition monitoring — Apply for condition based maintenance management

Big data analysis — Control unit, Big data engine, Load current, Flow rate, MLDO, MLSS,etc., Central control and monitoring

Dot line indicates the scope of our study

○**Innovations and merits of proposed technology**

1. Study detail
◆Demonstration of adopting deterioration / abnormality predicting technology using Vibration Sensing and Big Data Analysis

2. Merits
◆Stable WWTP operation by prediction of sudden rotary machine failure
◆Maintenance cost reduction by appropriate maintenance plan with abnormality predicting

3. Innovations
◆Auto diagnosis of rotary machine failure using Vibration Sensing
◆Abnormality predicting of WWTP using Big Data Analysis