Structural Integrity Associates, Inc.®

HIGH ENERGY PIPING

High-energy piping (HEP) systems in power plants contain critical components requiring careful maintenance and inspection. Our experts offer plant owners and operators a full range of HEP services, specializing in HEP Program development, implementation and integration into PlantTrack, our knowledge/data management system. These cost-effective tools maximize the efficiency of lifecycle management budgets. Our use of real-time monitoring, finite element modeling, fitness-for-service analysis, Non-destructive examinations, and metallurgical lab analysis provide plant owners and operators a customized HEP program to fit plant needs.

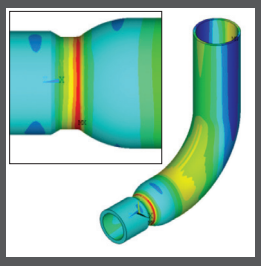
SERVICES

HEP PROGRAM DEVELOPMENT

We offer clients an integrated, multidisciplinary HEP management program to ensure safety and reliable operation of these crucial systems. Our experts consider regulatory, code requirements (e.g. B31.1) and lead the industry in identifying new issues.

CONDITION ASSESSMENTS

Our methodologies are unique in the power generation industry and rely on an integrated approach to assessment. Our piping condition assessment capabilities include design and operational reviews, evaluations of historical operating and inspection data, consideration of hanger and support records, system stress analyses (based on the current condition of the system), non-destructive examinations (NDE), material sampling and testing, and component lifing based on pipe condition and accumulated service damage.



CYCLE CHEMISTRY AND FAC

Since catastrophic failure of tubing and piping can occur with little or no warning, our FAC programs are designed to identify and address locations most susceptible to FAC damage and implement corrective actions to alleviate the potential for such damage to occur.

STRESS ANALYSIS, LIFING, AND FITNESS FOR SERVICE (FFS)

We evaluate new and old piping systems from the construction stage through having decades of service time systems using a multidisciplinary approach utilizing materials specialists and analytical engineers experienced with assessing existing conditions and providing recommendations or overseeing changes to critical components or systems.

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CSEF (GRADE 91) EXPERTISE

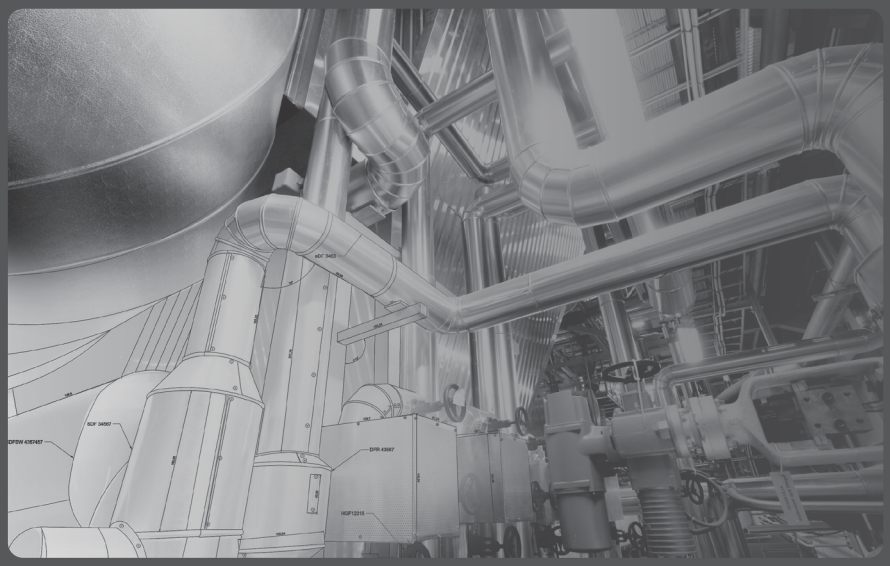
Recognized as an industry leader in Creep Strength Enhanced Ferritic (CSEF) steels such as Grades 91 and 92, we have specific expertise related to issues these materials present. Our services address all aspects of CSEF design, procurement, fabrication, installation, operation, analysis, and inspection.

PIPING INSPECTION

Finding in-service damage in high temperature piping systems subject to creep requires different skills and procedures compared to performing a code-acceptance inspection. Our NDE professionals are trained in advanced NDE techniques specifically designed to find damage to equipment operating at high temperature and high pressure, including components made from advanced materials such as Grade 91.

REAL-TIME HEALTH TRACKING

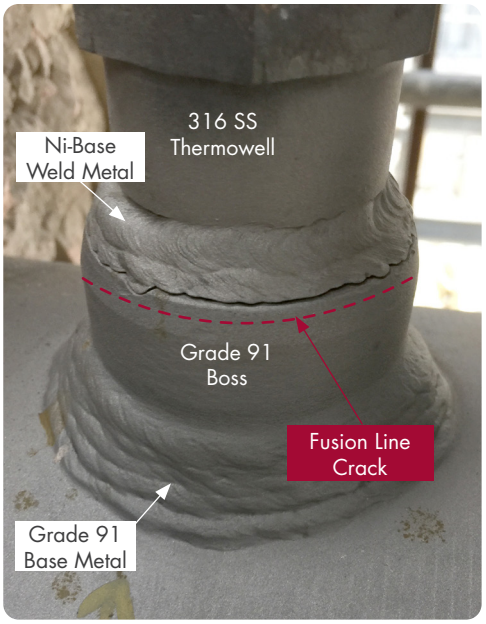
We provide real-time health tracking through our High Energy Piping Damage Tracking App. Damage due to creep and fatigue is accumulated from existing instrumentation, calculated and tracked in real-time, providing users valuable information on the health of individual welds within the HEP system. This App is an add-on module to the PlantTrack software.



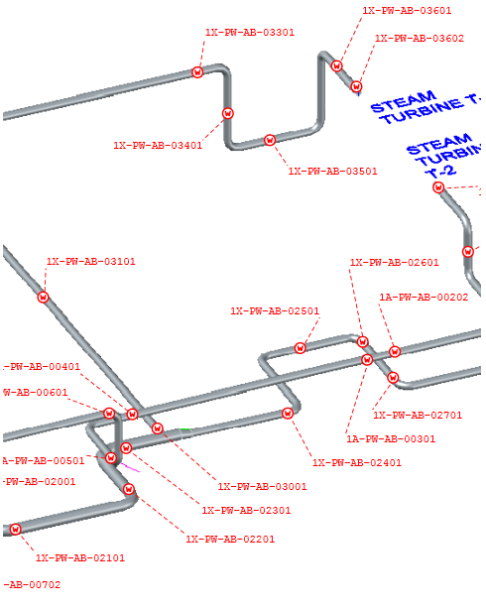
PlantTrack DATA MANAGEMENT

PlantTrack's Piping module provides users with a web application and database to track the data collected and records future actions to be taken. Based on past results, users can quickly plan needs for inspected or analyzed locations sorted by risk, last inspection date, previous indications, etc. Collected data can be mapped/overlaid onto interactive drawings of the piping systems for more accurate review and analysis.

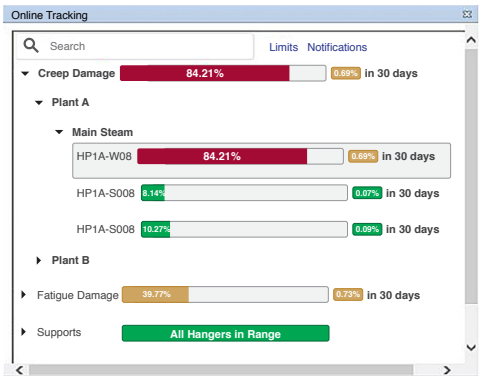
PlantTrack™
Engineering Insight Through Data



Dissimilar Metal Welds in Grade 91 Steel



Above is an image of a typical system with the overlaid weld labels.



Online Damage Tracking of critical plant locations