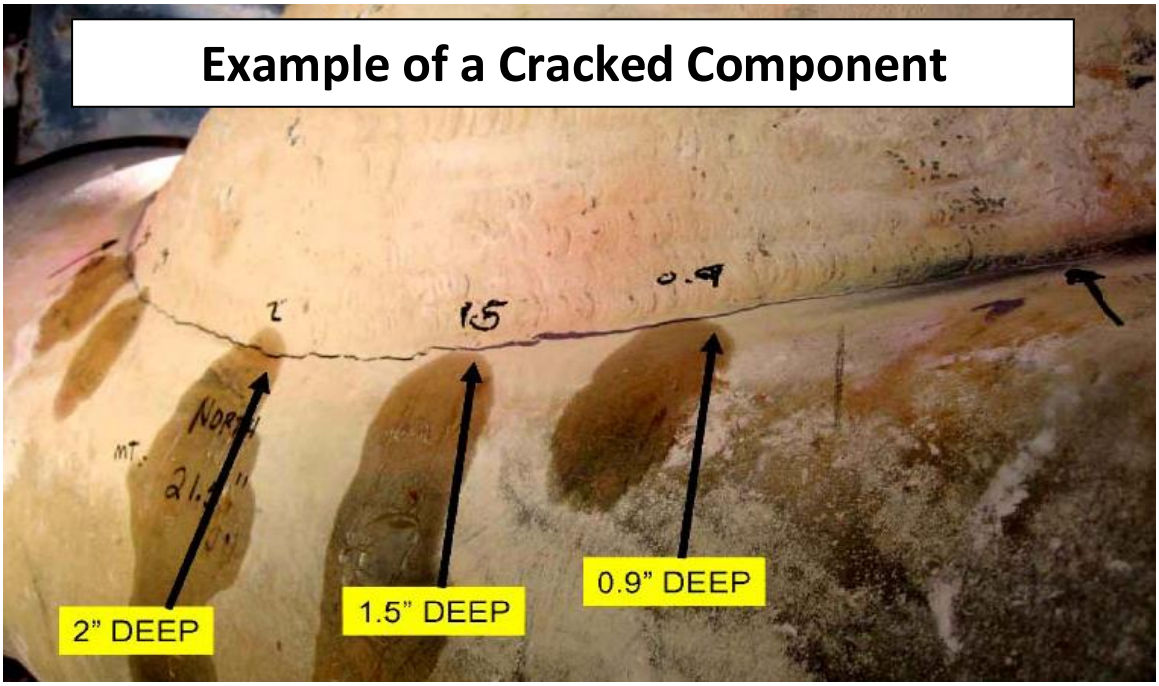
EPRI Workshop on

# "Structural Integrity of Components in High Temperature Applications"

held in Collaboration with ASME 2019 PVP Conference

**Where.** Hyatt Regency San Antonio Riverwalk, San Antonio, Texas;
**When.** Thursday and Friday July 18 - 19, 2019.

**Contacts:** Jonathan Parker, PhD, CEng, FIMMM, FIMechE.
Johnna Cortopassi, jcortopassi@epri.com




Further information regarding the 2019 PVP conference & the location is available from:
https://event.asme.org/PVP?_ga=2.68249940.474161117.1552944625-2018579933.1549990882

**Workshop Background**

EPRI has been providing technical support to key Global stakeholders in the Electricity Supply Industry for over 40 years. In the Generation Sector, a key research imperative is knowledge creation and technology transfer linked to reliable, safe and economically flexible operation of power plants. EPRI collaboration has included contributions to development of databases containing key properties for high temperature alloys, contributions to methods of Design and Fabrication as well as compiling Case Studies of in-service issues and facilitating Root Cause assessment.

Technology transfer has been an important aspect of this work so that lessons learned can be used to establish best practice; these activities have included annual workshops, publication of summary documents and additional research. Excellence in science and

engineering is necessary to underpin technology which will help to meet challenges associated with safe and reliable operation of plant.

The present Workshop on "*Structural Integrity of Components in High Temperature Applications*" will permit a broad transfer of insight, identify areas of agreement and seek to define issues for future focused research. Sessions will review design considerations, materials selection and fabrication techniques which are considered best practice for improved damage tolerance of components. Ensuring that components have sufficient damage tolerance increases the defect size required for fast fracture and increases the detection window between crack initiation and fracture.

Prevention of catastrophic structural failure requires the application of an integrated approach which includes informed engineering analysis, quality assurance, plant monitoring and in-service inspection. In many applications, the challenge is to establish the correct balance between the different factors to ensure safety and still derive value for the invested resource. Even using published rules for making structural integrity assessments through application of published and/or recognized fitness for service approaches still necessitates the use of expert technical judgement. The current Workshop will provide an inclusive forum for consideration of all fitness for service issues relating to the evaluation of performance of components operating at high temperatures.

**Workshop Technical Areas**

This Workshop will be held over a day and a half from Thursday morning to mid-day on Friday. It is expected that the Technical sessions will involve presentations and discussion of the following topics:

- Component Design and Fabrication,
- Materials Properties, covering both Strength and Ductility of Steels,
- High Temperature Crack Growth,
- Fracture Toughness,
- Aging effects and Embrittlement,
- Structural Integrity Methods and Applications
- Illustration through consideration of Case Studies.

Each session will be led by a designated expert developer who will be responsible for the specific content. However, following the success of the Workshop at the 2018 PVP Conference, each session will aim for appropriate periods of discussion so that all delegates have the opportunity to raise questions / issues. For those wishing to offer formal presentations, Abstracts (of about 250 words) outlining presentation content should be sent by May 31st 2019 to Johnna Cortopassi at jcortopassi@epri.com.

**International Collaboration**

The success of EPRI events is in part a consequence of the fact that delegates provide input which is representative of stakeholders involved in engineering decisions linked to the design, fabrication and use of high energy components and systems. Typically participants from suppliers, designers, research organizations and service providers as well as end users will attend. We invite interested individuals from all parts of the world to join us and to participate in the Workshop.