

Power Industry

CASE STUDY

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Key Facts

Sector Power Industry

Category Investigation of Platen Reheater Tube

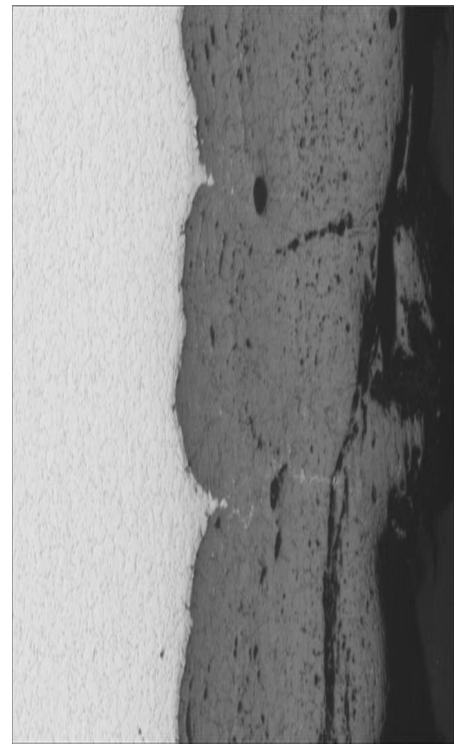
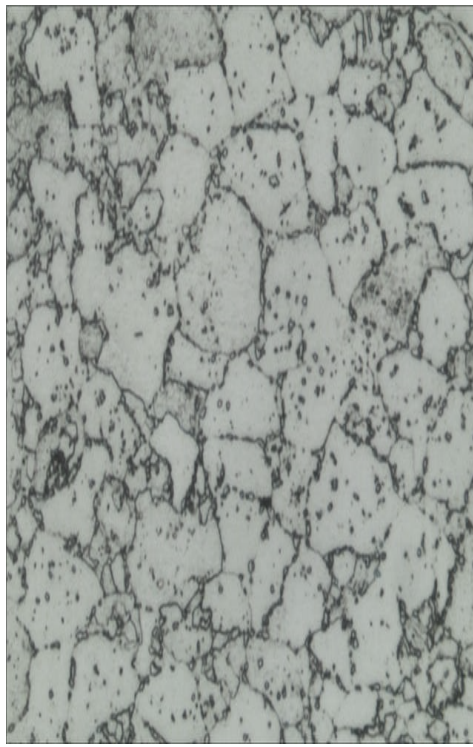
Problem

- Platen reheater tube failed in form of crack during service. Leakage was noticed as abnormal sound heard from peep hole of the furnace along with increase in consumption of DM water make-up.
- MOC of the tube is SA213 T22



Diagnosis

- The predominant damage mechanism leading to linear nature of puncture on extrados region of bend portion is because of the under-deposit corrosion promoted by carry over of water in the reheater and concomitant concentration of salt impurities.
- The metallurgy of reheater tube is as per the specification of SA 213 T22. While the tensile and hardness values appear to be satisfactory, the local microstructure degradation is because of the service damage.



Solution/Recommendations

- The thinning at extrados region towards leakage contours is mainly from inner surface where localized scale built-up has taken place.
- EDS analysis shows presence of sulphur, phosphorous and sodium ions along with moisture-based contaminations on ID surface near failure location. This points towards excessive scale formation in view of the persistent salt concentration and possible by presence of water at this location.
- Source of water ingress requires to be carefully explored and suitable remedial measures shall be taken and controlled.

Contact Us

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