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TESTING OF UPPER RING OF GUIDING APPARATUS DURING REVITALIZATION OF A6 AGGREGATE AT HE DJERDAP 1

Summary

In present paper, rejection of the upper ring of the guiding apparatus (URGA) during revitalization of the A6 aggregates at HE Djerdap 1 has been presented. Rejection was conducted after 37 years of exploitation based on the decisions made after testing, both NDT and DT, and unsuccessful recovery using various welding technologies.

Key words

upper ring of guiding apparatus, testing, lamellar tearing

ISPITIVANJA GORNJEG PRSTENA USMERNOG APARATA U TOKU REVITALIZACIJE AGREGATA A6 NA HE ĐERDAP 1

Rezime

U radu je prikazano škartiranje gornjeg prstena usmernog aparata (GPUA) u toku revitalizacije agregata A6 na HE Đerdap 1. Škartiranje je obavljeno nakon 37 godina eksploatacije, a na osnovu odluka donesenih ispitivanjem bez i sa razaranjem (IBR i IR) i bezuspešnih sanacija različitim tehnologijama zavarivanja.

Ključne riječi

gornji prsten usmernog aparata, ispitivanja, lamelarno cepanje

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6. CONCLUSION

Removal of the defects after UT and repair welding on URGA, on condition that no defect in the base metal of vertical sheet appears, is a painstaking and long-lasting job with uncertain result. The behaviour of thus made joints in the next period of exploitation of 40 years no one can predict with certainty.

DT has shown that the sheet material 40-mm thick, when loaded in the direction normal to surface, behaves as a material without contractions of the section. As the sheet material 40-mm thick is not susceptible to yield, one can expect that the stresses induced by flange welding may cause lamellar tearing on the inclusions of globular oxide-, sulphide- and aluminate-type.

Optimal solution for this problem is manufacture of new URGA with modified geometry of the flange joint and technical requirements predicting strict control of built-in materials.

Modified geometry of the flange joint means avoidance of the stresses normal to surface of vertical sheet and joints with structural non-through-weld on the locations under dynamic loading, as well.

Technical requirements and strict control of built-in materials mean that new calculation of carrying capacity, dimensioning, quality specification, material control and rigorous control are obligatory.

LITERATURE

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