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Impact of Common Cause Failure on Reliability Performance of Redundant Safety Related Systems Subject to Process Demand

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Highlights

- A new reliability model for redundant SRSs utilising Markov chains is introduced.
- The proposed model incorporates process demand in low demand mode of operation.
- Redundant configurations enhance safety and reliability performance of SRSs.
- Assessment entails dangerous undetected, common cause failures and repair rates.
- Advantages of the new reliability model against IEC 61508 approach were observed.

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