Prime ideals in reduced Rickart rings

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A *reduced Rickart ring* is a reduced ring R (i.e., $a^n = 0$ implies $a = 0$ for every ring element a and every natural number n) such that for every $a \in R$ there exists a (necessarily unique) idempotent a' with the property

$$ax = 0 \Longleftrightarrow a'x = x. \tag{1}$$

An ideal I in a reduced Rickart ring R is called π*-ideal* if, for every $a \in R$, $a \in I$ implies $a'' \in I$.

Let $P \neq R$ be a prime ideal in a reduced Rickart ring R. Then P is a π-ideal iff it is a minimal prime ideal which contains only zero divisors. This is a generalization of Cornish's similar result on commutative Rickart rings (see [1]).

References

[1] W.H. Cornish, The Variety of Commutative Rickart Rings, *Nanta Math.* 5, 1972, 43–51.