over R then R[x] is a GUFD.

We end this section with an application of the theory developed in the previous sections and state the

Proposition 15. Let R be an integral domain such that for every non zero non unit x in R

$$x = Q_1 \cap Q_2 \cap \ldots \cap Q_n$$

where Q_i are primary ideals such that $\sqrt{Q_i}$ is a minimal prime ideal, then R is a GUFD if it is an HCF domain.

Proof. (1) from the hypothesis it follows that every non zero non unit of R is contained in a finite number of minimal prime ideals of R.

(2) R being an HCF ring R_P is a valuation domain for every non zero minimal prime ideal P of R.

(3) The proof that $R = \cap R_P$ follows the same lines as the proof of ~~Prop.~~ Theo. 12.

From (1),(2) and (3) above it follows that R is an HCF GKD and hence is a GUFD.

5. Ideal Theory.

This section includes a brief account of the behaviour of minimal prime ideals of a GUFD. We then pass on to the ideal theory of GKD's which are Prüfer(Bezout), the primary decomposition being our main concern. We shall find that the primary decomposition of every non zero ideal in a Prüfer GKD is unique, in other words a Prüfer GKD is a <u>W-ring</u>. At the end of the section we show that the necessary and sufficient condition for a Prüfer domain to be a Prüfer GKD is that its non zero ideals have primary decompositions.

For the sake of reference we quote the definition and some properties of <u>W-rings</u> from [10].

Definition . A ring R is a <u>W-ring</u> if each ideal of R may