global variables: V a set, $E \subseteq V \times V$, $\rhd \subseteq V \times V$ and $\psi : V \to \mathit{wff}$

procedure $\textsc{Expand}(v \in V)$:
    if v is an uncovered leaf then
        for all actions $(M_v(v), T, m) \in \varDelta$
            add a new vertex w to V and a new edge (v, w) to E;
            set $M_v(w) \leftarrow m$ and $\psi(w) \leftarrow \textsc{True}$;
            set $M_e(v, w) \leftarrow T$

procedure $\textsc{Refine}(v \in V)$:
    if $M_v(v) = l_f$ and $\psi(v) \not\equiv \textsc{False}$ then
        let $\pi = (v_0, T_0, v_1) \cdots (v_{n-1}, T_{n-1}, v_n)$ be the unique path from ϵ to v
        if $\mathcal{U}(\pi)$ has an interpolant $\hat{A}_0, \ldots, \hat{A}_n$ then
            for $i = 0 \ldots n$:
                let $\phi = \hat{A}_i^{\langle -i \rangle}$
                if $\psi(v_i) \not\models \phi$ then
                    remove all pairs $(\cdot, v_i)$ from $\rhd$
                    set $\psi(v_i) \leftarrow \psi(v_i) \wedge \phi$
        else abort (program is unsafe)

procedure $\textsc{Cover}(v, w \in V)$:
    if v is uncovered and $M_v(v) = M_v(w)$ and $v \not\sqsubseteq w$ then
        if $\psi(v) \models \psi(w)$ then
            add (v, w) to $\rhd$;
            delete all $(x, y) \in \rhd$, s.t. $v \sqsubseteq y$;

Fig. 4. Three basic unwinding steps