```
P_causal_safety  THM

⊢  ∀E:EventStruct. safetyR(E) preserves Causal(E)
| by Unfolds ``preserved_by R_safety`` 0 THEN Reduce 0
THEN Auto

|    THEN Try (Fold `trace_property` 0 THEN Auto)

|    THEN InstLemma `iseg_select` [|E|;y;x] THENA Auto

|    THEN SimpHyp (-1) THEN ExRepD
THEN MoveToHyp 0 (-4)
|
1. E : EventStruct
2. x : |E| List
3. y : |E| List
4. y ≤ x
5. ||y||≤||x||
6. ∀i:ℕ. i<||y|| ⇒ y[i] = x[i]
7. Causal(E)(x)
⊢  Causal(E)(y)
  by All (\h. Unfold `P_causal` h THEN Reduce h)

     THEN ParallelOp (-1) THEN Thin (-3)
THEN ParallelOp (-1)

     THEN Subst y[i] = x[i] 0 THENA Auto THEN EasyHyp
THEN Subst y[j]
                                                                =
                                                                x[j]
      0 THENA Auto THEN EasyHyp
END
```