Inference at $*$ 2
of proof for Lemma member_nth_tl:

.....upcase..... NILNIL

1. T : Type
2. n : $\mathbb{Z}$
3. $0 < n$
4. $\forall x{:}T$, $L{:}(T$ List). $(x \in \text{nth\_tl}(n - 1;L)) \Rightarrow (x \in L)$

$\vdash$ $\forall x{:}T$, $L{:}(T$ List). $(x \in \text{nth\_tl}(n;L)) \Rightarrow (x \in L)$
by InductionOnList

1:

5. x : T
6. T List

$\vdash$ $(x \in \text{nth\_tl}(n;[])) \Rightarrow (x \in [])$

2:

5. x : T
6. T List
7. u : T
8. v : T List
9. $(x \in \text{nth\_tl}(n;v)) \Rightarrow (x \in v)$

$\vdash$ $(x \in \text{nth\_tl}(n;[u\ /\ v])) \Rightarrow (x \in [u\ /\ v])$

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http://www.nuprl.org/FDLcontent/p0_963683_/p28_783620_{member_nth_tl}2.html