

Inference at *
of proof for Lemma p-fun-exp-compose:

$\vdash \forall T:\text{Type}, n:\mathbb{N}, h, f:(T \rightarrow (T + \text{Top})). f^{\wedge} n \circ h = \text{primrec}(n;h;\lambda i.g. f \circ g)$
by (InductionOnNat)
CollapseTHEN (RepUR “p-fun-exp“ (0)).

1:

1. $T : \text{Type}$
 $\vdash \forall h, f:(T \rightarrow (T + \text{Top})). \text{p-id}() \circ h = h$

2:

1. $T : \text{Type}$
2. $n : \mathbb{Z}$
3. $0 < n$
4. $\forall h, f:(T \rightarrow (T + \text{Top})). f^{\wedge} n - 1 \circ h = \text{primrec}(n - 1;h;\lambda i.g. f \circ g)$
 $\vdash \forall h, f:(T \rightarrow (T + \text{Top})).$
 $\text{primrec}(n;\text{p-id}();\lambda i.g. f \circ g) \circ h = \text{primrec}(n;h;\lambda i.g. f \circ g)$