Inference at $*$ 2 2
of proof for Lemma p-fun-exp-add-sq:

1. A : Type
2. f : $A \rightarrow (A$ + Top)
3. x : A
4. m : $\mathbb{Z}$
5. $0 < m$
6. $\forall n$:$\mathbb{N}$. (↑can-apply(f ^m - 1;x)) ⇒ ((f ^n+(m - 1)(x)) ~ (f ^n(do-apply(f ^m - 1;x))))
7. n : $\mathbb{N}$
8. ↑can-apply(f ^m;x)
9. $\neg(n = 0)$

⊢(f ^n+m(x)) ~ (f ^n(do-apply(f ^m;x)))

by ((Unfold ‘p-fun-exp‘ (0)·)
CollapseTHEN (RecUnfold ‘primrec‘ 0)·)
CollapseTHEN (
((RepeatFor (first_nat 3:n) (((if (0) =0 then SplitOnConclITE else SplitOnHypITE (0))·)

CollapseTHENA (Auto·)·))·)
CollapseTHEN (((Try ((Complete (Auto’))·))·)

CollapseTHEN ((Reduce 0)
CollapseTHEN (Fold ‘p-fun-exp‘ 0)·)·)·)·

1:

10. $\neg(n+m = 0)$
11. $\neg(n = 0)$
12. $\neg(m = 0)$

⊢ (f o f ^(n+m) - 1 (x)) ~ (f o f ^n - 1 (do-apply(f o f ^m - 1 ;x)))

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