```
list-dec-length  THM

⊢  ∀L:ℕ List, i:ℕ||L||. 0<L[i] ⇒ ||L[i--]|| = ||L||
| by Auto THEN (Unfold ‘list-dec‘ 0)
|    THEN
|    (RWO
|     Thm* ∀n:ℕ, f:(ℕn→T). ||mklist(n;f)|| = n ∈ ℤ    {mklist_length}
|     0)
|    THEN
|    (Try (Complete Auto))
|
.....wf .....
1. L : ℕ List
2. i : ℕ||L||
3. 0<L[i]
⊢  (λj.if j=₂i→ L[j]-1 else L[j] fi) ∈ ℕ||L||→ℕ
| by Analyze THEN (Try (Complete Auto)) THEN SplitOnConclITE
|
.....set predicate .....
1. L : ℕ List
2. i : ℕ||L||
3. 0<L[i]
4. j : ℕ||L||
5. j = i
⊢  0≤L[j]-1  by HypSubst’ -1 0
END
```