```
upto_wf  THM

⊢  ∀i,j:ℕ. upto(i;j) ∈ {i..j⁻} List
| by Assert (∀d,i,j:ℕ. j-i = d ⇒ upto(i;j) ∈ {i..j⁻} List)
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| .....assertion .....
| ⊢  ∀d,i,j:ℕ. j-i = d ⇒ upto(i;j) ∈ {i..j⁻} List
| | by InductionOnNat THEN (RecUnfold `upto` 0) THEN SplitOnConclITE
| |
| .....subterm .....
| 1. d : ℤ
| 2. 0<d
| 3. ∀i,j:ℕ. j-i = d-1 ⇒ upto(i;j) ∈ {i..j⁻} List
| 4. i : ℕ
| 5. j : ℕ
| 6. j-i = d
| 7. i<j
| ⊢  upto(i+1;j) ∈ {i..j⁻} List  by GenConcl (upto(i+1;j) = l)
| |
| .....wf .....
| 1. d : ℤ
| 2. 0<d
| 3. ∀i,j:ℕ. j-i = d-1 ⇒ upto(i;j) ∈ {i..j⁻} List
| 4. i : ℕ
| 5. j : ℕ
| 6. j-i = d
| 7. i<j
| ⊢  upto(i+1;j) ∈ {(i+1)..j⁻} List  by EasyHyp
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. 1. ∀d,i,j:ℕ. j-i = d ⇒ upto(i;j) ∈ {i..j⁻} List
. ⊢  ∀i,j:ℕ. upto(i;j) ∈ {i..j⁻} List  by Auto THEN (Decide (i<j))
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. | 1. ∀d,i,j:ℕ. j-i = d ⇒ upto(i;j) ∈ {i..j⁻} List
. | 2. i : ℕ
. | 3. j : ℕ
. | 4. i<j
. | ⊢  upto(i;j) ∈ {i..j⁻} List  by InstHyp [j-i;i;j] 1
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. . 1. ∀d,i,j:ℕ. j-i = d ⇒ upto(i;j) ∈ {i..j⁻} List
. . 2. i : ℕ
. . 3. j : ℕ
. . 4. ¬i<j
. . ⊢  upto(i;j) ∈ {i..j⁻} List
. .   by (RecUnfold `upto` 0) THEN SplitOnConclITE
END
```