```
hanoi_peg_perm_comp2  THM

⊢  ∀p,r,q,s:Peg. p ≠ q ⇒ r ≠ s ⇒ permute(p to r ; q to s)(q) = s
| by Compute
|      ⌈permute(p to r ; q to s)(q)⌉
|      *⇒
|      if q=₂p→ r ; q=₂q→ s else otherPeg(r; s) fi
|
1. p : Peg
2. r : Peg
3. q : Peg
4. s : Peg
5. p ≠ q
6. r ≠ s
⊢  if q=₂p→ r ; q=₂q→ s else otherPeg(r; s) fi = s  by SplitITE Concl
|
|\
| .....truecase .....
| 7. q = p
| ⊢  r = s  by Analyze5
|
.\
. .....falsecase .....
. 7. q ≠ p
. ⊢  if q=₂q→ s else otherPeg(r; s) fi = s  by SplitITE Concl
. |
. .....falsecase .....
. 8. q ≠ q
. ⊢  otherPeg(r; s) = s  by Analyze-1
END
```