Inference at $*$ 1 0
 of proof for Lemma absval_zero:

1. $i : \mathbb{Z}$
$\vdash$ (if 0 $\leq$z i then i else -i fi = 0) $\Longleftrightarrow$ (i = 0)
  by PERMUTE{1:n,
  2:n,
  3:n,
  4:n,
  5:n,
  6:n,
  7:n,
  8:n,
  9:n,
  10:n,
  11:n,
  12:n,
  10:n,
  13:n,
  11:n,
  14:n,
  15:n,
  16:n,
  17:n,
  18:n,
  16:n,
  15:n,
  19:n}

  1: . . . . .wf. . . . . NILNIL

    $\vdash$ 0 $\leq$z $i \in \mathbb{B}$
  2: . . . . .wf. . . . . NILNIL

    $\vdash \mathbb{B} \in$ Type
  3: . . . . .wf. . . . . NILNIL

    2. 0 $\leq$z i = tt
    $\vdash$ (0 $\leq$z i = tt) $\in \mathbb{P}_1$
  4: . . . . .wf. . . . . NILNIL

    2. 0 $\leq$z i = tt
    $\vdash$ ($\uparrow$0 $\leq$z i) $\in \mathbb{P}_1$
  5: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{tt}$
$\vdash (0 \leq i) \in \mathbb{P}_1$
6: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{tt}$
$\vdash 0 \leq_z i \in \mathbb{B}$
7: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{tt}$
$\vdash 0 \in \mathbb{Z}$
8: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{tt}$
$\vdash i \in \mathbb{Z}$
9:

2. $0 \leq i$
$\vdash (\mathrm{if\ tt\ then}\ i\ \mathrm{else}\ \text{-}i\ \mathrm{fi} = 0) \iff (i = 0)$
10: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{ff}$
$\vdash (0 \leq_z i = \mathrm{ff}) \in \mathbb{P}_1$
11: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{ff}$
$\vdash (\uparrow i <_z 0) \in \mathbb{P}_1$
12: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{ff}$
$\vdash (i < 0) \in \mathbb{P}_1$
13: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{ff}$
$\vdash (\uparrow(\neg_b 0 \leq_z i)) \in \mathbb{P}_1$
14: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{ff}$
$\vdash 0 \leq_z i \in \mathbb{B}$
15: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{ff}$
$\vdash 0 \in \mathbb{Z}$
16: . . . . .wf. . . . . NILNIL

2. $0 \leq_z i = \mathrm{ff}$

$\vdash i \in \mathbb{Z}$
17: .....antecedent..... NILNIL

2. $0 \leq_z i = \text{ff}$
$\vdash$ True
18: .....wf..... NILNIL

2. $0 \leq_z i = \text{ff}$
3. $(\uparrow(\neg_b 0 \leq_z i)) = (\uparrow i <_z 0)$
$\vdash \mathbb{P}_1 = \mathbb{P}_1$
19:

2. $i < 0$
$\vdash$ (if ff then i else -i fi $= 0) \iff (i = 0)$
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http://www.nuprl.org/FDLcontent/p0_942988_/p121_73447_{absval_zero}1_0.html