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ImpFoldZeroProof.v

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Require Import List.
Require Import String.
Require Import ZArith.

Open Scope list_scope.
Open Scope string_scope.
Open Scope Z_scope.

Require Import StructTactics.
Require Import ImpSyntax.
Require Import ImpCommon.
Require Import ImpExprTransf.
Require Import ImpInterpNock.
Require Import ImpConstFold.

Require Import ImpEval.
Require Import ImpStep.
Require Import ImpSemanticsFacts.
Require Import ImpInterpProof.
Require Import ImpInterpNockProof.
Require Import ImpExprTransfProof.

Lemma cfold_aux_fwd :
  forall s h e v,
    ImpEval.eval_e s h e v ->
    ImpEval.eval_e s h (cfold_aux e) v.
Proof.
Admitted.

Lemma cfold_aux_bwd' :
  forall s h e v,
    I.interp_e s h (cfold_aux e) = Some v ->
    I.interp_e s h e = Some v \/\
    (forall v', ~ ImpEval.eval_e s h e v').
Proof.
Admitted.

Lemma cfold_aux_bwd :
  forall s h e v,
    eval_e s h (cfold_aux e) v ->
    eval_e s h e v \/\
    (forall v', ~ eval_e s h e v').
Proof.
Admitted.

Lemma cfold_p_fwd :
  forall p v,
    steps_p p v ->
    steps_p (cfold p) v.
Proof.
Admitted.

Lemma cfold_p_bwd :
  forall p v,
    steps_p (cfold p) v ->
    steps_p p v \/\ can_get_stuck_prog p.
Proof.
Admitted.

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