Move Valve

INVOCATION:
(! (POSITION VALVE $X))

CONTEXT:
(AND (DELAY TWO-GOOD $DEL-2TBS)
     (DELAY ONE-GOOD $DEL-1TB))

EFFECTS:
((=> (POSITION VALVE $X)))

DOCUMENTATION:
"This KA tries to put the valve in position $x.
It waits ($del-2tbs) time units if the two
sensors are good, or ($del-1tb) time units
if only one is good.
After this time, it shutdowns if the trusted
sensor(s) is not in good position. "

```
                                    START
                          (! (POSITION SWITCH-VALVE $X))
                                     N1
                          (! (= @SWITCH-TIME (CURRENT (TIME))))
                                     N2
                                          (? (~ (& (TYPE TB $TB1)
            (? (& (TYPE TB $TB1)                  ~(STATUS $TB1 FAILED))))
               (STATUS $TB1 FAILED)))
                                            N11
                                                 (^ (V (ELAPSED-TIME
                                                        @SWITCH-TIME $DEL-2TBS)
                                                    (& (POSITION SENSOR1 $X)
                                                       (POSITION SENSOR2 $X))
                                                    (& (TYPE TB $TB1)
                                                       (STATUS $TB1 FAILED))))
            N3  ◄── (? (& (TYPE TB $TB1)        N4
                          (STATUS $TB1 FAILED)))
                                                 (? (~ (& (TYPE TB $TB1)
                                                          (STATUS $TB1 FAILED))))
         (^ (& (V (ASSOCIATED-TB $TB1 $TB2)            N14
                  (ASSOCIATED-TB $TB2 $TB1))
               (V (ELAPSED-TIME              (? (& (POSITION SENSOR1 $X)    (? (~ (& (POSITION SENSOR1 $X)
                  @SWITCH-TIME $DEL-1TB)            (POSITION SENSOR2 $X)))           (POSITION SENSOR2 $X))))
                  (POSITION $TB2 $X))))
            N12                                  END10                      N34
    (? (POSITION $TB2 $X))  (? (~ (POSITION $TB2 $X)))
                                                         (! (SHUTDOWN (TWO-SENSORS $DEL-2TBS)))
      END9           N31
                                                                           END1
        (! (SHUTDOWN (TRUSTED $TB2 $DEL-1TB)))
           END0
```