```
;Manage the LED

;   ToggleLED
;   LEDon
;   LEDoff
;   ResetLED
;   UpdateLED
;   SignalSETPOINT

;------------------
;check LED state and flip
ToggleLED:
    btfsc   vSTATE,vLEDon
      goto LEDoff

    ;drop into toggle LED ON

;------------------
;set LED on
LEDon:
    banksel GPIO
    bsf     LED             ;turn LED on
    Set_vSTATE vLEDon       ;set LED ON flag
    return

;------------------
;set LED off
LEDoff:
    banksel GPIO
    bcf     LED             ;turn LED off
    Clear_vSTATE vLEDon     ;clear LED ON flag
    return

;reset LED for current state
ResetLED:
    banksel FLASHdelay0
    movf    FLASHdelay0,W
      movwf FLASHdelay
    movf    FLASHcount0,W
      movwf FLASHcnt
    movlw   cLEDONticks
      movwf LEDcnt          ;set flash ON duration (ticks)
    Clear_vSTATE vLEDact    ;clear LED ACTIVE flag
    call LEDoff
    return

;------------------
;Update LED status
UpdateLED:
    btfsc   vSTATE,vLEDact  ;is LED ACTIVE?
      goto  UpdateLED_ctrl  ;yes
    decfsz  FLASHdelay      ;time to flash LED?
      return                ;no, wait for next tick

UpdateLED_act:  ;activate LED flash sequence
    Set_vSTATE vLEDact      ;set LED to ACTIVE
```

```
    banksel LEDcnt
    movlw   cLEDONticks
    movwf   LEDcnt
    incf    LEDcnt
    goto    UpdateLED_on    ;and turn on

UpdateLED_ctrl: ;test current LED state on/off
    btfss   vSTATE,vLEDon   ;is LED on?
      goto  UpdateLED_off   ;no, continue LED off activity

UpdateLED_on:   ;turn on for cLEDONticks ticks
    call    LEDon
    banksel LEDcnt
    decfsz  LEDcnt          ;LED on enough ticks?
      return                ;no, wait for next tick

    ;time to change LED status (ON -> OFF)
    banksel LEDcnt
    movlw   cLEDOFFticks
    movwf   LEDcnt
    incf    LEDcnt

UpdateLED_off:  ;turn off for cLEDOFFticks ticks
    call    LEDoff
    banksel LEDcnt
    decfsz  LEDcnt          ;LED off enough ticks?
      return                ;no, wait for next tick

    ;one complete flash - ON / OFF

    ;repeat FLASHcnt times
    banksel FLASHcnt
    decfsz  FLASHcnt        ;enough flashes?
      goto  UpdateLED_act   ;no, start another flash

    ;re-initialize LED params for vSTATE = vWait
    call    ResetLED
    return

;------------------
;turn on GREEN LED if COILTEMP >= SETPOINT (NOT vBelow)
;wait for COILTEMP at/above SETPOINT for 2-byte TOKEITdelay ticks
SignalSETPOINT:

    ;if vBelow then turn off LED
    Skip_If_NOT_vBelow
    goto    s_sp_off

    ;test if delay expired
    banksel TOKEITdelay
    movf    TOKEITdelay
    Skip_If_ZERO
    goto    s_sp_dec
    movf    TOKEITdelay+1   ;check for zero value
    Skip_If_ZERO
    goto    s_sp_dec
```

```
    goto    s_sp_on         ;delay expired, go turn on LED

    ;delay not expired so decrement delay
s_sp_dec:
    movlw   .1
    subwf   TOKEITdelay
    Skip_If_CARRY_CLR       ;1 > lo(TOKEITdelay)
    return
    subwf   TOKEITdelay+1   ;1 > lo(TOKEITdelay)
    Skip_If_CARRY_CLR
    return
    clrf    TOKEITdelay
    clrf    TOKEITdelay+1

s_sp_on:    ;turn LED on
    call    LEDon
    return

s_sp_off:   ;turn LED off
    call    LEDoff
    return


;end    *****
```