

The loop stack stores the last instruction addresses and termination conditions of temporarily dormant loops. Up to four levels can be stored. The only extra cycle associated with the nesting of `DO UNTIL` loops is the execution of the `DO UNTIL` instruction itself, since the pushing and popping of all stacks associated with the looping hardware is automatic.

When using the counter expired (`CE`) status as the termination condition for the loop, an additional cycle is required for the initial loading of the counter. [Table 3-1](#) shows the termination conditions that can be used with `DO UNTIL`.

Table 3-1. DO UNTIL Termination Condition Logic

Syntax	Status Condition	True If:
EQ	Equal Zero	AZ = 1
NE	Not Equal Zero	AZ = 0
LT	Less Than Zero	AN .XOR. AV = 1
GE	Greater Than or Equal Zero	AN .XOR. AV = 0
LE	Less Than or Equal Zero	(AN .XOR. AV) .OR. AZ = 1
GT	Greater Than Zero	(AN .XOR. AV) .OR. AZ = 0
AC	ALU Carry	AC = 1
NOT AC	Not ALU Carry	AC = 0
AV	ALU Overflow	AV = 1
NOT AV	Not ALU Overflow	AV = 0
MV	MAC Overflow	MV = 1
NOT MV	Not MAC Overflow	MV = 0