

Alarm-based Signals

Local application

Wed, Jan 10, 1996

This ASIG local application is designed to support digital control line signals that reflect the alarm state of analog channels. If a channel is bad, one can assert some digital control signal that is otherwise de-asserted. One particular case like this that has always been supported is the beam inhibit control signal. Any analog channel, or binary status bit that is in the alarm scan may have the optional attribute of causing the beam inhibit signal to be asserted when it is bad. For example, if a Linac RF gradient is out of tolerance, it is desirable to automatically prevent beam from being accelerated through the Linac, as it is not good beam anyway. This local application supports the same service, but applied to other control lines that may be needed to affect equipment in specific ways.

The parameters of the ASIG local application appear as follows:

```
E LOCAL APPS      01/10/96 1120
NODE<0614>  NTRY<32>/64  H<0508>
NAME=ASIG  CNTR=AD  DT= 0  MS
TITL"ALARM-BASED CTRL SIGNAL "
SVAR=00000000      01/03/96 1508
ENABLE  B<00AA> ASIG ENABLE
SPARE    <0000>
CHAN1    C<011C> RF3HV  38.56 KV
C-BIT1   B<0191>*RF3  COMPUTR ENBL
CHAN2    C<031C> RF4HV  38.85 KV
C-BIT2   B<0391>*RF4  COMPUTR ENBL
CHAN3    C<051C> RF5HV  40.27 KV
C-BIT3   B<0591>*RF5  COMPUTR ENBL
CHAN4    C<0000>
C-BIT4   B<0000>
```

Up to four Channel-Bit pairs may be specified. If the Bit# of a pair is zero, that pair is inactive. Each pair logically acts independently. If the reading of the specified analog Channel is in alarm (in the "bad" state) then the specified control Bit# is asserted. The actual state of "asserted" is specified by the sign bit of the Bit# parameter. In the above example, the asserted state of each of the three specified controls lines is zero. As long as the RF3 High Voltage reading is in alarm, for example, the RF3 Computer Enable control signal is set to zero; otherwise, it is set to one. (If the reverse control signal logic had been desired, then the Bit# parameter would have been 8191 rather than 0191.)