

- d. Ventilation system interlocks are operable.
  - e. \* The safety channels indicate the actual power level as determined by a thermal power measurement.
13. On each day that pulse mode operation of the reactor is planned, a functional performance check of the transient (pulse) rod system shall be performed.
- Semi-annually, at intervals not to exceed eight months, the transient (pulse) rod drive cylinder and the associated air supply system shall be inspected, cleaned and lubricated as necessary.

#### F. Radiation Monitoring

1. The radiation levels within the reactor laboratory shall be monitored by at least one area radiation monitor during reactor operation or when work is done on or around the reactor core or experimental facilities. The monitor shall have a readout and provide a signal which actuates an audible alarm. During short periods of repair to this monitor, reactor operations may continue while a portable gamma-sensitive ion chamber is utilized as a temporary substitute.
2. A continuous air monitor with readout and audible alarm shall be operable in the reactor room when the reactor is operating.
3. The alarm set points for the above radiation monitoring instrumentation shall be verified at least once a week. This instrumentation shall be calibrated at least once a year.

#### G. Fuel Storage

1. All fuel elements or fueled devices shall be rigidly supported during storage in a safe geometry ( $k_{eff}$  less than 0.8 under all conditions of moderation).

TABLE I  
MINIMUM REACTOR SAFETY SYSTEMS

<u>Originating Channel</u>	<u>SetPoint</u>	<u>Mode in which effective</u>		
		<u>SS</u>	<u>Pulse</u>	<u>SW</u>
1. Safety Channel 1	110% of full power	X		X
2. Safety Channel 2	110% of full power	X		X
3. Scram button	Manual push	X	X	X
4. Preset timer	Less than or equal to 15 seconds		X	
5. CSC watchdog timer	Loss of refresh signal	X	X	X
6. DAC watchdog timer	Loss of refresh signal	X	X	X

TABLE II  
MINIMUM INTERLOCKS

<u>Action Prevented</u>	<u>Mode in which effective</u>		
	<u>SS</u>	<u>Pulse</u>	<u>SW</u>
1. Control rod withdrawal with neutron level less than 10 <sup>-7</sup> % power on the digital power channel.	X		
2. Simultaneous manual withdrawal of two control rods, including the pulse rod.	X		
3. Simultaneous manual withdrawal of two control rods excluding the pulse rod.			X
4. Initiation of pulse above 1 kW.		X	
5. Application of air pressure to pulse rod drive mechanism unless cylinder is fully inserted.	X		
6. Withdrawal of any control rod except pulse rod.		X	