

Table 3.2 Minimum Reactor Safety Channels

| Safety Channel        | Function   | Number operable<br>in specified mode |       |
|-----------------------|--|--------------------------------------|-------|
|                       |  | SS                                   | Pulse |
| Fuel temperature      | Scram if fuel temperature exceeds 500°C                                      | 1                                    | 1     |
| Power level           | Scram if power level exceeds 125% of full licensed power                     | 1                                    |       |
| Manual scram          | Manually initiated scram   | 1                                    | 1     |
| Wide range            | Prevent initiation of a pulse above 1 kW                                     |                                      | 1     |
|                       | Prevent control element withdrawal when neutron count is less than 2 cps     | 1                                    |       |
| High-voltage monitor  | Scram on loss of high voltage to power channels                              | 1                                    | 1     |
| Pulse-mode switch     | Prevent withdrawal of standard control and regulation elements in pulse mode |                                      | 1     |
| Preset timer          | Transient rod scram 15 seconds or less after pulse                           |                                      | 1     |
| Pool level            | Alarm if pool level falls below 16 ft over the core                          | 1                                    | 1     |
| Transient rod control | Prevent application of air unless fully inserted                             | 1                                    |       |

Note: SS = steady-state

Bases: The fuel temperature and power level scrams provide protection to ensure that the reactor can be shut down before the safety limit on the fuel element temperature will be exceeded. The manual scram allows the operator to shut down the system if an unsafe or abnormal condition occurs. In the event of failure of the power supply for the safety chambers, operation of the reactor without adequate instrumentation is prevented. The preset timer ensures that the reactor power level will reduce to a low level after pulsing. The interlock to prevent startup of the reactor with less than 2 cps ensures that sufficient neutrons are available for proper startup.

The interlock to prevent the initiation of a pulse above 1 kW is to ensure that the magnitude of the pulse will not cause the fuel element temperature safety limits to be exceeded. The interlock to prevent withdrawal of the standard or regulating control elements in the pulse mode is to prevent the reactor from being pulsed while on a positive period. The pool level alarm is intended to alert the operator to any significant decrease in the pool level.

#### 6.10 Reporting Requirements

In addition to the requirements of applicable regulations, and in no way substituting for those requirements, reports shall be made to the Nuclear Regulatory Commission as follows:

- (1) A report within 24 hours by telephone or FAX to the Regional Administrator of the appropriate USNRC Regional Office, and to the NRC Operations Center, of
  - (a) Any accidental release of radioactivity above permissible limits in unrestricted areas whether or not the release resulted in property damage, personal injury, or exposure;
  - (b) Any violation of the safety limit;
  - (c) Any reportable occurrence as defined in Section 1.1, "Reportable Occurrence," of these specifications.
- (2) A report within 10 days in writing to the Director, Office of Nuclear Reactor Regulation USNRC, Washington, D.C. 20555, with a copy to the Regional Administrator of the appropriate USNRC Regional Office, of
  - (a) Any accidental release of radioactivity above permissible limits in unrestricted areas whether or not the release resulted in property damage, personal injury, or exposure. The written report (and, to the extent possible, the preliminary telephone or telegraph report) shall describe, analyze, and evaluate safety implications, and outline the corrective measures taken or planned to prevent recurrence of the event;
  - (b) Any violation of a safety limit;
  - (c) Any reportable occurrence as defined in Section 1.1, "Reportable Occurrence," of these specifications.
- (3) A report within 30 days in writing to the Director, Office of Nuclear Reactor Regulation, USNRC, Washington, D.C. 20555, with a copy to the Regional Administrator of the appropriate USNRC Regional Office, of
  - (a) Any significant variation of measured values from a corresponding predicted or previously measured value of safety-connected operating characteristics occurring during operation of the reactor;
  - (b) Any significant change in the transient or accident analysis as described in the Safety Analysis Report;
  - (c) Any significant changes in facility organization;
  - (d) Any observed inadequacies in the implementation of administrative or procedural controls.