

3.13 ACCIDENT MONITORING INSTRUMENTATION

Applicability: Applies to the operating status of accident monitoring instrumentation.

Objective: To assure operability of accident monitoring instrumentation.

Specification: A. Relief Valve Position Indicators

1. The accident monitoring instrumentation channels shown in Table 3.13.1 shall be operable when the mode switch is in the Startup or Run positions.
2. With the number of operable accident monitoring instrumentation channels less than the Total Number of Channels shown in Table 3.13.1, either restore the inoperable channels to operable status within 7 days, or place the reactor in the shutdown position within 24 hours.
3. With the number of operable accident monitoring instrumentation channels less than the Minimum Channels Operable requirements of Table 3.13.1, either restore the inoperable channel(s) to the operable status within 48 hours, or place the reactor in the cold shutdown condition within 24 hours.

B. Safety Valve Position Indicators

1. During power operation, both primary* and backup** safety valve monitoring instruments are required to be operable except as provided in 3.13.B.2 and 3.13.B.3.
2. If either the primary* or backup** accident monitoring instruments on a valve become inoperable, the primary* accident monitoring instrument on an adjacent valve must be operable.
3. If both the primary* and backup** accident monitoring instruments on a valve become inoperable and the primary* accident monitoring instrument on an adjacent valve is operable, either restore the inoperable channel(s) to an operable status within 7 days, or place the reactor in the cold shutdown condition within 24 hours.
4. If the requirements of Section 3.13.B.2 or 3.13.B.3 cannot be met within 48 hours, place the reactor in the cold shutdown condition within 24 hours.

* Acoustic Monitor

** Thermocouple

BASIS

The purpose of the safety/relief valve accident monitoring instrumentation is to alert the operator to a stuck open safety/relief valve which could result in an inventory threatening event.

As the safety valves present distinctly different concerns than those related to relief valves, the technical specifications are separated as to the actions taken upon inoperability. Clearly, the actuation of a safety valve will be immediately detectable by observed increase in drywell pressure. Further confirmation can be gained by observing reactor pressure and water level. Operator action in response to these symptoms would be taken regardless of the acoustic monitoring system status. Acoustic monitors act only to confirm the reseating of the safety valve. In actuality, the operator actions in response to the lifting of a safety valve will not change whether or not the safety valve reseats. Therefore, the actions taken for inoperable acoustic monitors on safety valves is significantly less stringent than that taken for those monitors associated with relief valves.

Should an acoustic monitor on a safety valve become inoperable, setpoints on adjacent monitors will be reduced to assure alarm actuation should the safety valve lift, since it is of no importance to the operator as to which valves lift but only that one has lifted. Analyses, using very conservative blowdown forces and attenuation factors, show that reducing the alarm setpoint on adjacent monitors to $< 1.4g$ will assure alarm actuation should the adjacent safety valve lift. Minimum blowdown force considered was 30g with a maximum attenuation of 27 db. In actuality, a safety valve lift would result in considerably larger blowdown force. The maximum attenuation of 27 db was determined based on actual testing of a similar monitoring system installed in a similar configuration.