

## 3.2 BASES (cont'd)

initiates the HPCI and RCIC systems. The reactor water level instrumentation is set to trip the recirculation pumps when the reactor water level is 105.4 in. above the top of active fuel. The low-low-low reactor water level instrumentation is set to trip when the water level is 18 in. above the top of active fuel. This trip activates the remainder of the ECCS subsystems, closes the main steam isolation valves, main steam line drain valves and reactor water sample line isolation valves, and starts the emergency diesel generators. These trip level settings were chosen to be high enough to prevent spurious actuation but low enough to initiate ECCS operation and primary system isolation so that post-accident cooling can be accomplished and the guidelines of 10 CFR 100 will not be exceeded. For large breaks up to the complete circumferential break of a 24 in. recirculation line and with the trip setting given above, ECCS initiation and primary system isolation are initiated in time to meet the above criteria. Reference paragraph 6.5.3.1 of the updated FSAR.

The high drywell pressure instrumentation is a diverse signal for malfunctions to the water level instrumentation and in addition to initiating ECCS, it causes isolation of Groups B and C isolation valves. For the breaks discussed above, this instrumentation will generally initiate ECCS operation before the low-low-low water level instrumentation; thus the results given above are applicable here also. Details of the isolation valve closure group are given in Section 7.3 of the updated FSAR. The water level instrumentation initiates protection for the full spectrum of loss-of-coolant accidents.

Venturis are provided in the main steam lines as a means of measuring steam flow and also limiting the loss of mass inventory from the vessel during a steam line break accident. The primary function of the instrumentation is to detect a break in the main steam line. For the worst case accident, main steam line break outside the drywell, a trip setting of 140 percent of rated steam flow in conjunction with the flow limiters and main steam line valve closure, limits the mass inventory loss such that fuel is not uncovered, fuel temperature peak at approximately 1,000°F and release of radioactivity to the environs is below 10 CFR 100 guidelines. Reference Section 14.6.5 of the updated FSAR.

The main steam line high temperature isolation function utilizes 16 sensors (instrument channels), with 4 sensors located at each of 4 different areas in the vicinity of the main steam lines. The 4 instrument channels associated with each of the 4 areas are arranged in a 1-out-of-2-taken-twice logic. Thus a main steam line break in any of the 4 areas will effect closure of all 8 main steam line isolation valves.

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TABLE 3.2-7

ATWS RECIRCULATION PUMP TRIP INSTRUMENTATION REQUIREMENTS

Minimum Number of Operable Instrument Channels Per Trip System (Notes 1 & 2)	Trip Function	Trip Level Setting	Applicable Modes
2	Reactor Pressure - High	$\leq 1120$ psig, or $\leq 1155$ psig (Note 3)	Run
2	Reactor Water Level - Low Low	$\geq 105.4$ in. above TAF	Run