

PBAPS

LIMITING CONDITIONS FOR OPERATION

3.3.C (Cont'd)

2. The average of the scram insertion times for the three fastest control rods of all groups of four control rods in a two-by-two array shall be no greater than:

<u>% Inserted From Fully Withdrawn</u>	<u>Avg. Scram Inser- tion Times (Sec)</u>
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5	0.398
20	0.954
50	2.120
90	3.8

3. The maximum scram insertion time for 90% insertion of any operable control rod shall not exceed 7.00 seconds.

SURVEILLANCE REQUIREMENTS

4.3.C (Cont'd)

2. After any fuel movement within the reactor pressure vessel, only those control rods associated with the core cells affected by the fuel movements shall be scram time tested with the reactor steam dome pressure greater than or equal to 800 psig prior to exceeding 40% of Rated Power.

3. At least once per 120 days of power operation, perform scram time testing for a representative sample of control rods with the reactor steam dome pressure greater than or equal to 800 psig.
4. Prior to declaring affected individual control rods operable after work on the control rod or control rod drive system that could affect scram insertion time, each affected control rod shall be scram time tested at any reactor steam dome pressure.
5. Prior to exceeding 40% of Rated Power after work on the control rod or control rod drive system that could affect scram insertion time, each affected control rod shall be scram time tested with the reactor steam dome pressure greater than or equal to 800 psig.

PBAPS

3.3 and 4.3 BASES (Cont'd)

Additional testing once per 120 days of a sample of the control rods is required to verify the continued performance of the scram function during the cycle. A representative sample contains at least 10% of the control rods. For planned testing, the control rods selected for the sample should be different for each test. Data from inadvertent scrams should be used whenever possible to avoid unnecessary testing at power, even if the control rods with data may have been previously tested in a sample. The 120 day frequency is based on operating experience that has shown control rod scram times do not significantly change over an operating cycle.

When work that could affect the scram insertion time is performed on a control rod or the control rod drive system, testing must be done to demonstrate that each affected control rod retains adequate scram performance over the range of applicable reactor pressures from zero to the maximum permissible pressure. The scram testing must be performed once before declaring the control rod operable.

Specific examples of work that could affect the scram times are (but are not limited to) the following: removal of any control rod drive for maintenance or modification; replacement of a control rod; and maintenance or modification of a scram solenoid pilot valve, scram valve, accumulator, isolation valve or check valve in the piping required for scram.

When work that could affect the scram insertion time is performed on a control rod or the control rod drive system, testing must be done to demonstrate each affected control rod is still within the limits with the reactor steam dome pressure greater than or equal to 800 psig. Where work has been performed at high reactor pressure, the requirements of 4.3.C.4 and 4.3.C.5 can be satisfied with one test. For a control rod affected by work performed while shut down; however, a zero pressure and high pressure test may be required. This testing ensures that, prior to withdrawing the control rod for continued operation, the control rod scram performance is acceptable for operating reactor pressure conditions. Alternatively, a control rod scram test during hydrostatic pressure testing could also satisfy both criteria.

Operability of the scram discharge volume vent and drain valves is necessary for maintaining a reservoir to contain the water exhausted from all control rod drives during a scram.

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