4.2.6.7 During operation with the nuclear instrumentation channels in 2 of 4 trip logic, at least three of nuclear channels 5, 6, 7, and 8, including their automatic gain control subsystem channels, shall be OPERABLE. If nuclear channel 5 or 6 is inoperable, its scram contacts shall be placed in the trip position. If power is de-escalated, the tripped channel's output shall be bypassed prior to entering 1 of 2 logic, subject to Section 4.2.6.1 requirements. If nuclear channel 7 or 8 is inoperable in a manner affecting the operability of its corresponding power-flow channel, the power-flow channel shall be bypassed, pursuant to the time limitations of Section 4.2.6.1, and the scram contacts of the nuclear channel shall be placed in the trip position.

4.2.6.8 Safety channels directly backed up by an identical channel or channels may be bypassed for maintenance or testing. Safety channels in the partial scram circuit may be bypassed for maintenance or testing for up to 24 hours.

4.2.6.9 Both reactor forced circulation pumps shall be automatically shut down by a high reactor pressure signal or by a low reactor water level signal.

Bases -The RPTS is a diverse and independent backup except for common current sensing loops to the normal scram system for rapid shutdown of the reactor. To protect the primary system from an ATWS event in which either MSIV closes at power, thus eliminating the main condenser as a heat sink, the recirculation pumps must be shut down to prevent damage to the primary system due to high pressure. A rapid shut down of the recirculation pumps has the effect of causing an increase in the moderator voids in the reactor core. A substantial negative reactivity results and the power and pressure surges that might otherwise occur in the most limiting transient (MSIV closure) are substantially reduced. With the recirculation pumps shut down, the reactor power will be reduced to a steady state power level of less than 20% (based on natural circulation through the core).

4.2.8 Spent Fuel Storage and Handling

4.2.8.1 Fuel elements and control rods shall be inserted or removed from the reactor vessel one at a time.

4.2.8.2 Irradiated fuel elements shall be stored underwater in spent fuel storage racks that are positioned on the bottom of the spent fuel storage well, or in an approved shipping cask.

4.2.8.3 During the handling of irradiated fuel elements that have been operated at power levels greater than 1 Mwt the depth of water in the reactor upper cavity and/or the spent fuel storage well shall be at least 2 ft above the active fuel.

4.2.8.4 Irradiated fuel elements shall have decayed for at least 72 hours prior to placing them in the spent fuel storage well.

4.2.8.5 With the exception of a spent fuel shipping cask, the core spray bundle, the transfer canal shield plug and the other components and fixtures that are normally located and used within the spent fuel storage well, no objects heavier than a fuel assembly shall be handled over the spent fuel storage well.

5.1.5 Components which have been repaired, replaced, or otherwise subjected to temporary or permanent modification shall be tested in accordance with procedures which are appropriate in view of the nature of the repair, replacement or modification, and in view of the condition of the system.

5.1.6 All annual tests requiring the reactor to be shut down may be performed at the nearest scheduled shutdown, provided that the interval between tests does not exceed 16 months. The interval between semi-annual tests shall not exceed 8 months.

5.1.7 Definitions applicable to Sec. 5.2.15 are as follows:

Channel Check: A qualitative determination of acceptable operability by observation of channel behavior during operation. This determination shall include, where possible, comparison of the channel with other independent channels measuring the same variable.

Channel Test: Injection of a simulated signal into the channel to verify its proper response including, where applicable, alarm and/or trip initiating action.

Channel Calibration: Adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter which the channel measures. Calibration shall encompass the entire channel, including equipment actuation, alarm, or trip.

5.2 TESTING

5.2.1 Containment Testing

5.2.1.1 Containment Integrated Leakage Rate Test (Type A Tests):

(a) The integrated leakage rate test shall be performed at a pressure of at least 52 psig without any preliminary leak detection surveys and repairs except as necessary to correct any evidence of structural deterioration which may affect either the containment's structural integrity or leak tightness. Such structural deterioration and corrective actions taken shall be reported as part of the Type A test report.

Closure of containment isolation valves shall be accomplished by normal mode of actuation and without any preliminary exercise or adjustments. If valve closure malfunction is detected which requires corrective action before the test, this information shall be included in the report submitted to the Commission as required under Section 5.2.1.5.

The test duration shall be for a sufficient period of time to obtain meaningful leakage rate results. In addition, a controlled leakage rate test shall be included to verify the test accuracy.

(b) Acceptance Criteria: The maximum allowable test leakage rate Lpm shall not exceed 0.1 percent per 24 hours at the test pressure of 52 psig. If local leakage measurements are taken to effect repairs in order to meet the acceptance criterion, these measurements shall be taken at a test pressure of 52 psig.

To provide a margin for possible deterioration of the containment leakage integrity during the service interval extending to the subsequently scheduled Type A test, the measured leakage rate Lpm shall be reduced, if necessary, to a value Lpo not in excess of 75% of the leakage rate limit (0.075% per 24 hrs. at the test pressure of 52 psig). This leakage reduction shall be accomplished prior to resumption of plant operation.

(c) Corrective Actions: Where excessive leakage is experienced during a Type A test, leaks may be found and isolated from the test. Penetrations so isolated must be capable of local leakage testing. Once these leaks have been isolated, the Type A test may continue. Following the Type A test, local leakage rates must be measured before and after repairs to each isolated leakage path. The results of the Type A test are then back-corrected utilizing the conservative assumption that all measured local leakage is in a direction out of the containment unless it can be demonstrated otherwise. The local leakage measurements before the repair are added to the Type A results to determine the "as is" condition (except that leakage which is determined to be into the containment), while the after-repair measurements determine the "as left" condition. For a satisfactory Type A test, the sum of the Type A test leakage and local leakage measurements must be less than the maximum allowable test leakage rate.

(d) Test Frequency: (1) A set of three Type A tests shall be performed, at approximately equal intervals during each 10-year service period, with the third test of each set coinciding with the end of each 10-year service period. Type A test periods may coincide with the plant in-service inspection shutdown periods.

(2) If any Type A test fails to meet the acceptance criteria of (b) above, the test schedule applicable to subsequent Type A tests shall be subject to review and approval by the Commission.

(3) If two consecutive periodic Type A tests fail to meet the acceptance criterion of (b) above, notwithstanding the periodic retest schedule, a Type A test shall be performed at intervals not greater than 18 months until two consecutive Type A tests meet the acceptance criteria, at which time, the retest schedule specified in (d.1) above, may be resumed.

5.2.1.2 Individual Leak-Detection Tests (Type B and C Tests): Type B and C tests shall be performed as follows:

(a) Type B Tests: Leak-detection tests shall be performed at a pressure of at least 52 psig by using the soap-bubble technique (or other methods of equivalent sensitivity) or by determining the rate of pressure loss of pneumatically pressurized test chambers on the following containment components:

the electrical penetrations,
the reactor building spray valve shaft pen tration,
the freight door, and
the containment building airlocks

Containment components other than mentioned above, which develop leaks requiring repairs during the performance of Type A test, shall be included in a subsequent Type B test.

Component Leak Surveillance System: A leak surveillance system (i.e., continuous pressurization of individual containment components) that maintains a pressure not less than 52 psig at individual test chambers of containment penetrations and seals during normal reactor operation shall be acceptable in lieu of Type B tests of the components under such leak surveillance.

(b) Type C Tests: Containment Isolation Valve leak detection testing shall be conducted at a pressure of 52 psig.

(c) Acceptance Criteria: The combined leakage rate for all penetrations and valves subject to Type B and C tests shall not exceed 60% of the maximum allowable Type A test leakage rate.

(d) Corrective Actions: Leaks which cause the acceptance criteria of (c) to be exceeded shall be repaired and retested until the criteria is met. Repairs of lesser leaks are optional.

(e) Test Frequency: Type B and C tests (except for air locks and electrical penetrations) shall be performed at intervals no greater than 2 years. Air locks shall be tested at 4-month intervals. The freight door shall be tested following each closure prior to plant startup. Electrical penetrations shall be tested at intervals no greater than one year.

5.2.1.4 Permissible Periods for Testing: The performance of Type A tests shall be limited to periods when the plant facility is nonoperational and secured in the shutdown condition under administrative control and safety procedures.

5.2.1.5 Report of Test Results: The leakage rate results of Type A, B, and C tests that meet the acceptance criteria shall be reported in the applicable LACBWR operating report. Leakage test results of Type A, B, and C tests that fail to meet the acceptance criteria shall be reported in a separate summary that includes an analysis and interpretation of the test data, the least-squares fit analysis of the test data, the instrumentation error analysis, and the structural conditions of the containment or components, if any, which contributed to the failure in meeting the acceptance criteria. Results and analyses of the supplemental verification test employed to demonstrate the validity of the leakage rate test measurements also shall be included.

5.2.2 The reactor building isolation system will be tested for proper operation prior to every cold startup, but this test will not be required more often than at 30-day intervals.

5.2.3 The exterior surfaces of the LACBWR ventilation stack and the smoke stack of the conventional steam power generating station, Genoa 3, adjacent to the LACBWR plant shall be inspected for structural integrity at an interval no longer than 5 years following the initial construction inspection, and at subsequent intervals not longer than 5 years apart.

5.2.4 The reactor vessel shall by hydrostatically tested at 1400 psig after any of its gasketed joints have been opened and resealed. All hydrostatic tests shall be performed with the vessel at a temperature no lower than that specified in Section 4.2.2.4.

5.2.5 The forced circulation system controls and automatically-operated valves shall be tested for proper operation annually.

5.2.6 The shutdown condenser system control valves shall be tested at least quarterly to demonstrate their operability. The integrated system shall be tested for proper operation annually. In addition, the condenser tube bundle shall be presurized to greater than 1250 psig and tested for leakage annually.

5.2.9 The boron-injection system controls and the remotely-operated valves shall be tested for proper operation during cold shutdowns, but not more often than every 3 months.

(Next number is 5.2.12)

5.2.12 Each control rod scram time shall be measured prior to cold startups and the total scram time shall be demonstrated to be within the limit specified in Sec. 4.2.5.1. These scram time tests will not be required more often than at 30-day intervals, unless the reactor vessel head has been removed or unless maintenance work has been performed on a control rod drive which could affect its scram time.

5.2.13 Each control rod drive mechanism shall be exercised by moving each partially or fully withdrawn control rod at least one-half inch in any one direction at least once per 31 days.

5.2.14 Proper operation of both control solenoids for each of the hydraulic scram valves will be determined annually by visual observation of solenoid arm position following control rod scram.

5.2.15 Instrument shall be checked, tested and calibrated as indicated in the following chart.

REVIEW (Continued)

c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

d. Proposed changes to Appendix "A" Technical Specifications or this Operating License.

e. Violations of codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.

g. Events requiring 24 hour written notification to the Commission.

h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems, or components that could affect nuclear safety.

i. Reports and meeting minutes of the Operations Review Committee.

AUDITS

6.5.2.8 Audits of unit activities shall be performed under the cognizance of the SRC. These audits shall encompass:

a. The conformance of unit operation to provisions contained within the Appendix "A" Technical Specifications and applicable license conditions at least once per 12 months.

b. The performance, training and qualifications of the entire unit staff at least once per 12 months.

c. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems or method of operation that affect nuclear safety at least once per 6 months.

d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per 24 months.

e. The Emergency Plan and implementing procedures at least once per 12 months.