INSPECTION PROCEDURE 72302

STARTUP TEST WITNESSING AND OBSERVATION

PROGRAM APPLICABILITY: 2514

72302-01 INSPECTION OBJECTIVES

01.01 Ascertain conformance of licensee to license and procedural requirements.

01.02 Observe operating staff performance.

01.03 Ascertain the adequacy of test program records, including preliminary evaluation of test results.

72302-02 INSPECTION REQUIREMENTS

02.01 Witness of Startup Testing. The inspector shall witness and review the following for each of the tests selected for witnessing.

a. Overall Crew Performance

1. Procedure of appropriate revision is available and in use by all crew members.

2. Minimum crew requirements are met.

3. All test prerequisites and initial conditions are met and/or those which are waived are reviewed/approved in accordance with procedure/technical specification (TS) requirements.

4. Test equipment required by the procedure is calibrated and in service.

5. Test data equipment required by the procedure is calibrated to a common time base.

6. Test is performed as required by a technically adequate procedure.

7. Crew actions appear to be correct and timely during the performance of the test. Coordination is adequate.

8. Quick summary analysis is made to assure proper plant response to the test.

9. All data are collected for final analysis by the proper personnel.

b. Test Results

1. Verify by inspector observations that overall test acceptance criteria have been met.

2. Review the preliminary test results to assure that licensee's preliminary test evaluation is consistent with inspector observation.

3. For those TS LCOs which may be affected during the test, verify adherence to these requirements.

02.02 Observation of Power Ascension Testing. In addition to and/or complementary with the requirements of Section 02.01, the inspector shall provide inspection coverage as follows:

a. Portions of all Category I tests should be observed.

b. Observe any test specifically required to be conducted as part of a license condition.

c. Verify that "offshift" personnel (since the licensee has the equivalent of more than three shifts) are integrated into the "onsite" organization to obtain experience and training during the conduct of power ascension tests.

02.03 Program Review and Evaluation

a. Review the test sequencing document (or procedure) including changes (daily).

b. Review the Startup Test Engineers Log (or equivalent), the Control Room Log, and the Shift Supervisor's Log, as applicable (daily).

c. Review Plant Information Reports (daily).

d. Attend meetings of the Test Data Evaluation Group and the Plant Operations Review Committee (at least once every 2 weeks).

72302-03 INSPECTION GUIDANCE

03.01 Witness of Startup Testing. The inspector is required to witness Category I tests selected in accordance with the method described in IE MC 2514. Before witnessing a test, the inspector shall have completed a review of the test procedure per IP 72300. The inspector must be familiar with the test procedure in order to adequately witness the testing described in this procedure. Communication must be maintained between the inspector and the licensee so that the licensee's test dates are known far enough in advance for the inspector to be ready to witness the selected tests.

Licensees are not expected, nor are they to be asked, to delay conduct of a test pending the inspector's arrival.

a. Overall Crew Performance

1. The inspector should determine the proper procedure revision by examining the licensee's master index or the "up-to-date" procedure file. Assure by examination and discussions that crew members are using the procedure with the proper revision number and are familiar with the procedural requirements, especially the limitations and precautions.

2. Technical Specifications will specify minimum crew by licensed operator requirements and by non-licensed operator requirements. The procedure may also require additional manpower for specific test functions. The inspector should assure that both requirements are met.

3. The inspector should verify that procedural prerequisites and initial conditions have been met. Verification should be performed by the inspector's review of the required records (valve lineup list, instrumentation calibration procedure, system checklist, or signoff item in the listed procedure) or by direct observation (monitoring instrumentation indications, valve positions, equipment start position switches, or personnel actions). Additionally, if the test involves the use of a TS Special Test Exception LCO, ensure that the LCO is adhered to and the applicable surveillance requirements are performed.

4. Test equipment and transient test equipment are normally required for measuring important parameters to demonstrate system designs. This equipment must be calibrated. The inspector must verify that calibration was performed in a recent time period. Once this has been done for a piece of test equipment, it need not be redone each time that piece of equipment is used.

6-8. Crew coordination is an important part of any test in that crew members are each performing procedural steps. Many of these steps involve coordinated activities between two or more crew members. The inspector must observe that the assigned person directing the test activities has knowledge of the activities of these crew members and of the time sequence of these activities when time sequence is important. The test sequence may be interrupted or modified. These interruptions or modifications must be communicated to crew members and modifications must be handled in accordance with existing procedures. These modifications in many cases will be in accordance with existing administrative procedures. On a sampling basis, the inspector should verify adherence to the procedural limitations and precautions, and the individual test steps.

The acceptance criteria should be stated in the test procedure. Crew members should be knowledgeable of the expected events at their stations, i.e., control rod position, boron concentration, thermal power level, core axial and radial power distribution, DNBR, peak linear heat rates, system flow rates, pressures and temperatures. This type of information should be available to the person in charge in a timely manner so that an evaluation may be made soon after performing the test. Events or data individually within expectations may be collectively indicating unexpected results. All necessary raw data must be gathered in a timely manner following the test. The person in charge must ensure that these data are collected, assembled, and transferred to person(s) performing the final analysis.

b. Test Results. The inspector should also, independent from the licensee evaluation, observe and evaluate certain events or data gathering during and following the tests. These events or data gathering activities should be selected during the inspector's review of the procedure. He should be knowledgeable of the expected measurements for important test parameters, i.e., the flow rate drops to 1/10 of the initial value for x seconds and returns to some other value within 2 minutes, a specific reactivity change occurs during a specified time interval, computer printout values are read to be within the acceptance criteria. At least two of the most important events or data recording should be observed or evaluated by the inspector.

03.02 Observation of Power Ascension Testing. This inspection requirement stems from Task Action Plan item IV.F, "Increase IE Scrutiny of the Power-Ascension Test Program." Test observation does not require the same level of preparation as that required for test witnessing. However, the inspector should, as a minimum, review the test procedure for all tests to be observed. Test witnessing activities done per Section 02.01, if done for a test, satisfies this inspection requirement.

03.03 Program Review and Evaluation. Performance of these activities will ensure the inspector is cognizant of test activities, test results, and test discrepancies or other plant problems affecting testing, including their disposition. It is likely these inspection requirements will be accomplished by the Resident Inspector.

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