

# NRC INSPECTION MANUAL

RNRP

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## INSPECTION PROCEDURE 69010

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### CLASS I RESEARCH AND TEST REACTOR SURVEILLANCE

PROGRAM APPLICABILITY: 2545

#### 69010-01 INSPECTION OBJECTIVE

To determine if the licensee conducted its surveillance program as required by the technical specifications (TS) and licensee commitments, since the last inspection.

#### 69010-02 INSPECTION REQUIREMENTS

02.01 Surveillance Procedures. Verify that technical specification required surveillance procedures can be used to perform their intended function for the as-built configuration of the facility.

02.02 Surveillances. Verify that surveillances were performed in accordance with the requirements in the TS.

02.03 Limiting Conditions of Operations. Verify that parameters identified in the TS, e.g., limiting conditions of operation (LCO), design features, or limiting safety system settings (LSSS), or safety limits, that do not have an established surveillance frequency in the TS, are maintained within the bounds assumed in the TS or the safety analysis report.

02.04 Records and Logs. Verify that the records and logs (including those of chart recorders) are consistent with the results of the TS required surveillance records.

#### 69010-03 INSPECTION GUIDANCE

##### General Guidance

This inspection procedure is to determine if the licensee has met the TS surveillance requirements and maintained the facility within the bounds of safety analysis assumptions.

Surveillance is the verification of set points and conditions required by the TS on both a regular and an irregular basis. The types of items covered by this procedure include reactivity measurements that may be required once or twice a year, certain conductivity checks that may be weekly activities, and interlocks that must be checked before each start-up.

This procedure also covers those values or conditions specified or assumed by the TS that have no assigned surveillance frequency but have a definite bearing on safety. These latter items would include such things as a required air flow for the Argon-41 exhaust system.

General guidance may be found in the ANSI/ANS Section 15 Standards listed in Appendix B to Inspection Procedure 69001, "Class II Research and Test Reactors." Additional general guidance may be found in the Division 2 Regulatory Guides, and the "Other Regulatory Guides of Possible Interest to Division 2 Recipients" listed after the Division 2 Regulatory Guides Table of Contents. The reference to this guidance is to aid the inspector in technical evaluation of licensee programs and is not to be used as requirements unless the licensee has committed in writing to the NRC to use the specific guidance document.

The sample sizes and resource estimates suggested in the inspection procedure is provided for broad planning purposes and to define the typical depth of the inspection. It is not intended to be a rigid requirement on the inspector. Actual inspection at any facility may require more or less effort depending on past inspection history, conditions at the facility, and safety significance.

### Specific Guidance

03.01 Surveillance Procedures. The review of no fewer than two or more than five of the licensee's surveillance procedures should provide an acceptable sample for this inspection requirement. The procedures selected should be reviewed on a rotating basis. If practical, the inspector should review the procedures before the onsite inspection and monitor work in progress when onsite.

The licensee should conduct surveillances associated with safety-related systems or components in accordance with approved procedures as required by TS. For facilities with experienced personnel and little turnover in personnel, activities that are within the skill of qualified personnel do not require step-by-step delineation of work performance steps. Whereas, for facilities with turnover, such as in student operators, more detailed procedures would be appropriate.

If TSs do not require surveillance procedures, the inspector should consider the need for such requirements based on the results of performance based inspection observations in the conduct of this inspection. For example, if personnel do not have procedures, they may calculate rod worth by the positive period method, then by rod drop, and then by the 1/M methods. Alternating methods in this way could produce widely varying results for the same rod. Such wide variation could make the worth measurements meaningless because the values may not result in a uniform basis to determine that core conditions had not changed. Thus, finding inconsistent results that do not meet the intent of a requirement

may establish the need for specific procedures. Such concerns should be raised to appropriate management and the NRR project manager.

Descriptions in the TS, the Safety Evaluation Report (SER), the Safety Analysis Report (SAR) and supporting documentation, including plan and instrument drawings should be used during this evaluation. Any applicable design changes should be reflected in licensee surveillance activities. The procedures should enable the licensee to accomplish the TS required surveillance with the as-built system configuration and accuracy of the instruments. A simple example of a potential problem is the surveillance of a float alarm for reactor pool water level, in which operators manually depress the float. At a Research and Test Reactor, this procedure would not give complete assurance that the float will move when water level drops unless there is assurance that weight of the float assembly will actuate the sensing relay. An alternative may be to slowly move the float device above the water level or lower water level until the low level relay is actuated.

03.02 Surveillances. The observation of no fewer than two or more than five of the licensee's surveillances should provide an acceptable sample for this inspection requirement. The inspector should if possible observe the use of the same procedures reviewed in Section 03.01, above. The entire surveillance test need not be observed, but only the selected portions that provide the inspector confidence that the item was acceptably verified. When observation of surveillances in progress is not possible, the inspector should perform a walk-through of selected surveillance activities with responsible licensee personnel. Alternatively, the inspector may conduct discussions of the selected surveillance activities, and obtain separate or simplified measurements to determine compliance with the surveillance requirements. Respective licensee records should demonstrate that all required surveillances have been completed as required.

The licensee should review and approve the conduct and results of TS required surveillance activities in accordance with their administrative controls and procedures. For example, some reactivity measurements are done as class projects by students. If the licensee accepts these results to satisfy TS requirements, the results should be reviewed and approved by the appropriate licensee personnel in accordance with administrative control procedures.

03.03 Limiting Conditions of Operations. The review of two TS specified items for this inspection requirement should provide an acceptable sample. This review should examine parameters specified in TS that do not have specified surveillance. This inspection requirement is to assure that the licensee has not changed the initial licensing assumptions. If this is verified in the design change, or maintenance inspection activities it need not be repeated here.

The inspector should review only matters having a bearing on safety. As an illustration, if the descriptive information states that the exhaust stack is 33 feet high, it is generally not worth measuring to precise accuracy. However, if the TS include limits on primary coolant conductivity without including a specific frequency of measurement, the inspector should determine the manner in which the licensee assures that the limits are maintained. The verification need not include specific measurements of the parameter, but rather could be established through related controls. For example, rather than actual conductivity measurements, use of demineralizers with indication of spent resin capacity combined with

fuel examinations may be an acceptable alternative. Another example could be limitations on fuel temperature that may be established by maintaining the reactor within specified power levels. Refer to TS bases, SAR and SER descriptions to ensure that the appropriate safety significance is placed on the item.

While some surveillance may have frequencies established in more recent TS, older TS may not have some surveillance frequency requirements. It is not the intent here to establish surveillance frequencies at older facilities unless a real need is established, such as by determining that the value or condition, that directly relates to safety, has significant potential to not be met because of inadequate surveillance. Such discrepancies should be brought to the attention of appropriate management and the assigned NRR Project Manager.

03.04 Records and Logs. The review of no fewer than two or more than five of the TS required surveillance records should provide an acceptable sample for this inspection requirement. The observation of the records and logs for the observed surveillances above would be preferred for this inspection requirement. Records should be accurate, complete, and maintained. Charts should be marked on a regular frequency with the date, time, and indication of the personnel as required by the licensee procedures. Recorder drives will occasionally slip yielding readings that are not precise. The inspector should avoid looking for small errors, but should focus on the consistency of facility conditions with the surveillance results.

#### 69010-04 RESOURCE ESTIMATE

For planning purposes, the direct inspection effort to complete this inspection procedure is estimated as eight hours.

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