

## **POLICY ISSUE** **(Notation Vote)**

March 1, 1993

SECY-93-049

For: The Commissioners

From: James M. Taylor  
Executive Director for Operations

Subject: IMPLEMENTATION OF 10 CFR PART 54, "REQUIREMENTS FOR RENEWAL OF OPERATING LICENSES FOR NUCLEAR POWER PLANTS"

Purpose: To inform the Commission of the outcome of the staff's senior management review of key license renewal issues and to obtain the Commission's approval of staff proposals for implementing the provisions of 10 CFR Part 54.

Summary: The staff discusses its review of significant license renewal issues that have been identified since 10 CFR Part 54 was promulgated. On the basis of its review, the staff concludes that a rule change is not needed to facilitate an effective and efficient renewal review process. The staff identifies a specific approach for carrying out the rule-required integrated plant assessment, which includes an initial broad scope of plant equipment but provides mechanisms to quickly focus on important equipment whose performance or condition could be negatively impacted by aging in the renewal term. The approach recognizes that both maintenance rule requirements and risk based methodologies can play a role in meeting license renewal requirements. Additionally, the staff identifies a resource-efficient approach for future staff review of industry reports sponsored by the Nuclear Management and Resources Council (NUMARC); which is intended to utilize areas of technical agreement between NUMARC and the staff. Specific recommendations are presented to establish Commission-approved positions on key license renewal issues.

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NOTE: TO BE MADE PUBLICLY AVAILABLE  
ON MARCH 3, 1993

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Background:

In 1989, the Commission published an advanced notice of proposed rulemaking for license renewal and published the proposed rule in the summer of 1990. In December 1990, the staff published a draft regulatory guide and a draft standard review plan (SRP), which were both based on the proposed rule.

The final rule was published in December 1991 and became effective in January 1992. The final rule included some significant changes from the proposed rule such as (1) a reliance on the regulatory process to ensure that, except for renewal-term aging issues which the regulatory process was determined not to address explicitly, the licensing bases for each plant provide and maintain an acceptable level of safety; (2) the addition of a definition of age-related degradation unique to license renewal (ARDUTLR); (3) changes to the definition of equipment important to license renewal; and (4) revision of the integrated plant assessment (IPA) to no longer include compilation and explicit review of the current licensing bases (CLBs).

Since publishing the final rule, the staff has been conducting various activities for implementing the license renewal rule implementation. These actions have included revising the regulatory guide and SRP, interacting with the lead plant licensees, and reviewing industry technical reports sponsored by NUMARC. Over the past year, a number of significant policy issues have been identified.

On December 7, 8, and 18, 1992, the staff briefed the Commission on the status of the various license renewal activities and on the staff's plans to resolve key license renewal issues. The staff informed the Commission that a senior management review group would address these issues. The staff also stated that it would interact with NUMARC in public meetings to obtain the industry's views. In a staff requirements memorandum of December 21, 1992, the Commission endorsed the staff's senior management review, identified a number of issues for consideration by the group, and directed the staff to submit its recommendations to the Commission.

Discussion:

The senior management group has reviewed the following issues identified over the past year: (1) effective and efficient implementation of the IPA screening requirements, (2) the question of whether the maintenance and license renewal rules can be integrated further, (3) the appropriate scope of the license renewal rule, (4) the appropriate interpretation of ARDUTLR, (5) the role of risk-based methodologies in the IPA, (6) the appropriate level of detail required in an application and in updates required by the

rule, (7) the question of whether issues pertaining to fatigue and the environmental qualification of electrical equipment (EQ) for older plants should be evaluated for license renewal or as a current generic safety issue, and (8) the question of whether the form of a renewed license affects the technical requirements for license renewal.

The staff began its review by focusing broadly on the overall principles and objectives of the rule. The staff reaffirmed the rule's two key principles as well as the appropriateness of the current focus of what must be examined before a renewed license is issued. Specifically, except for NEPA environmental requirements and absent special circumstances, the issue for license renewal is the effective management of aging effects on the performance or condition of important plant equipment during the renewal term. The staff's proposed approach focuses on effective programs rather than the identification of aging that is or is not unique to the renewal term. Additionally, the approach builds on the judgement that performance and condition monitoring of plant equipment can be relied upon to demonstrate that aging effects, including potential effects in the renewal term, are being effectively managed.

Further, the staff concluded that the rule appropriately recognizes that, except for mitigating the effects of ARDUTLR, the existing NRC regulatory oversight process is adequate and will continue to ensure that each plant's licensing bases provides an acceptable level of safety. Before new requirements are established, the regulatory process requires the NRC staff to evaluate the safety significance of the requirements pursuant to the backfit provisions of 10 CFR 50.109.

The staff's review and conclusions for key license renewal issues are discussed below.

#### Integrated Plant Assessment

The rule requires each applicant for license renewal to perform an IPA to demonstrate that plant systems, structures, and components (SSCs) that are important to license renewal (ITLR) have been identified and that, for those components subject to ARDUTLR, ARDUTLR will be adequately managed. Recognizing that the IPA is the central action required to implement the rule, the staff focused on identifying an effective and efficient IPA approach.

The specific details identified by the staff for implementing the IPA, and described in the following, are based on a review philosophy which requires initial consideration of

the entire plant to identify those SSCs defined by the rule as ITLR. Furthermore the approach provides mechanisms to quickly focus on equipment that may require new or enhanced programs to manage aging in the renewal term. The enclosure provides a discussion and flow path description of the staff's IPA approach.

Under this approach all SSCs currently defined as ITLR, including those subject to operability requirements contained in facility technical specification limiting conditions for operation (TS LCOs), would be identified and would be subject to further evaluation within the IPA. Although the staff considered the possibility of narrowing the ITLR scope (e.g., to focus only on TS LCOs which include SSCs necessary to mitigate design basis events) it concluded that (1) a rule change would be required to change the rule's specified scope, (2) the existing ITLR scope is consistent with the rule's philosophy that the applicant should consider equipment within a large initial scope in the license renewal process, and (3) SSCs that are currently included in TS LCOs but are not safety significant can be removed from the TS in advance of license renewal.

The next step in the IPA provides for eliminating parts of systems or structures that are not required to support the ITLR function of the previously identified equipment.

The proposed IPA next determines whether age-related degradation (ARD) is not unique or whether it could be unique. The staff believes that most structures and components (SCs) could be subject to age-related degradation that is unique to license renewal and would therefore not be screened out of the IPA at this step. This is consistent with both the IPA requirement to identify SCs that could have any ARDUTLR and the definition of ARDUTLR which includes aging whose effects were not explicitly evaluated by the applicant and approved by the NRC for the renewal term. Although some long-lived ITLR equipment might be identified by the applicant as not being subject to ARDUTLR, a demonstration that this equipment could not have ARDUTLR would require a detailed justification by structure- or component-specific inspection and/or analysis.

Relatively short-lived equipment that is replaced at a fixed interval could also be identified as not subject to ARDUTLR. Such identification would, however, require an applicant to provide detailed SC-specific justification in the application. The staff expects that the justification for conclusions that such equipment has no ARDUTLR will be based on commitments for continuing licensee action to periodically replace the equipment. As provided in 10 CFR 54.33(b), the

staff can include license conditions and technical specifications as necessary to ensure that licensee actions will be continued so that equipment will not experience ARDUTLR. In determining whether or not technical specifications or license conditions are necessary, the staff will consider such factors as safety significance, the nature of administrative controls on commitments and changes to commitments, and reporting requirements.

The staff concluded that the disadvantages of justifying that SCs are not subject to ARDUTLR, particularly short-lived SCs covered by periodic replacement programs, are not offset by an advantage of screening out early in the IPA and most SCs would not be dispositioned by such a justification. Additionally, the staff concluded that, since such justifications would need to be detailed and might be based on continuing programs, the time and resources required for hearings would not be significantly different from the time and resources needed for hearings related to effective program justifications. As discussed below, the staff concluded that, for most SCs, effective programs could be demonstrated more effectively and efficiently and would provide greater flexibility for future program changes than "no ARDUTLR" justifications. Accordingly, the staff focused on an implementation approach that would provide a permissible alternative to the detailed component-by-component justification.

If few SCs are screened out due to "not ARDUTLR," subsequent screening should be focused upon demonstrating that a significant majority of SCs are already included in effective programs and can be dispositioned with minimum documentation submitted in the application. The staff believes that an effective program can be demonstrated with minimum documentation if the SC is; (1) covered by regulation or the facility's technical specifications, with specified acceptance criteria for performance or condition and (2) is in the maintenance rule scope and requirements. As a result of meeting these stipulations, this equipment would be (1) subject to either performance- or condition-related acceptance criteria as a condition of the license or regulation and (2) covered by requirements for root-cause analysis and follow-on corrective action, enhanced monitoring, or both in the event of maintenance preventable failure. For such components this could result in programs with acceptance criteria and monitoring and corrective action requirements that assure conformance with the CLB throughout the renewal term.

This approach is valid if the required surveillance activity is sufficient to detect, in a timely manner, ARD effects on performance or condition. If the required sur-

veillance activity tests the function or condition of the component sufficient to assure the component's capability to perform its safety function and comply with the CLB (e.g., Emergency Diesel Surveillance Testing) then this approach is valid. The staff's judgement is that this will be the case for many SCs because the technical specifications already include explicit performance and condition surveillance acceptance criteria, which assure compliance with the CLB. It is possible that some surveillance tests may be partially sufficient. In such cases, the applicant would need to address those aspects of performance or condition which are not covered by currently required surveillance. This IPA approach recognizes that performance or condition monitoring can be relied upon to demonstrate that aging effects are being effectively managed and controlled.

Whether an applicant chooses to disposition an SC under "not unique" to license renewal or under "effective program" the staff will review the applicants justification for either disposition. This review will consider that the rule calls for an explicit identification and evaluation of ARD effects to justify dispositioning at the "not unique" phase.

SCs included in existing programs but not addressed by technical specification or by regulation, as discussed above, may also be found to already be subject to effective programs for license renewal. However, the applicant would be required to provide additional justification in the application. This additional information would demonstrate that the existing programs, including performance or condition monitoring programs established under the maintenance rule (MR), meet the requirements of effective programs prescribed by 10 CFR Part 54.

While the MR does not require such information to be submitted for evaluation to the NRC, it would be required in a license renewal application to support an agency finding that the standards for issuance of a renewed license, 10 CFR 54.29, have been met.

New programs determined to be needed for certain SCs would also require additional information beyond the summary information described above. Alternatively, the applicant could justify that no actions are required because the performance or condition of the SC and compliance with the CLB are not affected by age-related degradation.

No changes to the rule are needed to facilitate this IPA approach.

The enclosure provides additional information for performing the IPA.

#### Integration of Maintenance and License Renewal Rules

Although different in some respects, the MR and the license renewal rule (LRR) share a fundamentally similar objective and scope. The objective of both rules is to ensure that the effects of age-related degradation on the performance or condition of important plant equipment are adequately mitigated; the specific focus of the maintenance rule - maintenance preventable failures - essentially encompasses all forms of age-related degradation. Although the maintenance rule 10 CFR 50.65(a)(1) calls for performance goals to be set, the rule does not prescribe specific goals, rather the methods for establishing goals are described in the draft NUMARC guidelines endorsed by the NRC draft regulatory guide (RG). Similarly the maintenance rule 10 CFR 50.65(a)(2) does not require goals if preventive maintenance is effective, with effectiveness defined in the draft NUMARC guidelines. The scope of equipment covered by the rules is similar with a somewhat broader scope (e.g., non-safety-related equipment that is included in plant emergency operating procedures) covered by the MR. Additionally, although, the scopes of the two rules are not identical, the somewhat broader scope of the MR serves to facilitate the proposed IPA approach, since most ITLR equipment will be covered by the MR requirements.

The IPA approach described above, which would screen a large majority of SSCs as currently included in effective programs, recognizes the similarities of the two rules. The approach relies, in part, on MR results-oriented requirements to assess the effectiveness of maintenance activities. The MR requires licensees to monitor the condition or performance of applicable SSCs against goals established by the licensee. Where goals are not met, licensees are required to take corrective actions. Where preventive maintenance has been demonstrated effective through the absence of failures or unacceptable degradation in performance or condition, formal goal-setting, monitoring, and corrective action are not explicitly required.

Together, maintenance rule programs and NRC previously approved acceptance criteria (i.e., in regulation or within facility technical specifications) provide an efficient mechanism for identifying existing programs which are "effective" under the LRR. In order to establish effectiveness, the acceptance criteria established under technical specification or regulation, and the performance goals, monitoring, preventive maintenance and corrective actions

established under the maintenance rule, must in combination assure compliance with the CLB during the license renewal period. Using this approach, a large majority of equipment would be expected to be dispositioned on the basis of the effectiveness of programs. This IPA approach is viewed as an integration of the two rules. Under this approach the emphasis for implementing license renewal and the MR will be essentially the same (i.e., effectiveness of programs) and will not be focused principally on potential uniqueness of aging in the renewal term.

The staff noted that although the MR requirements are not effective until 1996, many licensees will begin implementing the maintenance rule in 1993-94 and all licensees are expected to be in full compliance by July 1996. Given the current schedules for plant-specific renewal applications, this approach of integrating the maintenance and license renewal rules is appropriate. No changes to either rule are required to implement this proposed approach.

#### Role of Risk-Based Methodologies

Although the IPA methodology adopted in the rule is based on a deterministic approach, the Commission recognized that probabilistic risk assessment (PRA) can be useful for achieving the aging-mitigation goals of license renewal. The Commission concluded that PRA could be used to supplement the IPA process to further ensure that important equipment is identified for the license renewal review.

Relying partly on maintenance activities and MR requirements, the proposed IPA approach recognizes that risk significance is expected to be a key factor in implementing MR requirements. The draft MR regulatory guide that endorses NUMARC guidelines emphasizes the use of risk insights in (1) determining the equipment for which goals and monitoring are established under 10 CFR 50.65(a)(1) and (2) establishing appropriate performance criteria for preventive maintenance programs under 10 CFR 50.65(a)(2).

Accordingly, the staff expects that in implementing the MR, licensees will consider insights from plant-specific PRAs, including the results of individual plant examination programs and reliability-based maintenance assessments. As a result, risk methodologies will play a key role in implementing the maintenance rule and an indirect role in implementing the LRR requirements. However, use of PRAs will be more limited under the renewal rule. Specifically, use of PRAs cannot excuse nonconformance with the CLB or development of an effective program to assure CLB compliance during the renewal term.



### Level of Detail and Reporting Requirements

The staff recently noted industry concerns regarding the level of detail needed in the supplemental final safety analysis report (SFSAR) application for license renewal. In addition to requiring information on effective programs and IPA methodology, the rule requires that the SFSAR application include a list of all SSCs determined to be important to license renewal (ITLR). Section 54.37 of the rule also requires an annual update to the SFSAR, including any newly identified or deleted ITLR SSCs and

...a list of all changes made to programs for management of age-related degradation unique to license renewal that do not decrease the effectiveness of programs to which the licensee committed and a brief description, including a summary of the safety evaluation of each change.

The staff understands that the industry has the following principal concerns regarding these requirements: (1) SSCs contained in the SFSAR list could become newly subject to the requirements of 10 CFR 50.71(e), (2) a detailed listing of each ITLR structure and component would result in a voluminous SFSAR application and is inconsistent with the level of detail contained in the initial FSAR and supplements, and (3) the requirement for annual reporting of all changes to effective programs would be an unwarranted administrative burden.

The staff believes that these concerns can be adequately addressed without changing the rule. For example, the reporting requirements of 10 CFR 50.71(e) are consistent with the requirements of 10 CFR 54.37(b) as they apply to additions and deletions from the list of SSCs ITLR. Additionally, the ITLR SSC listing can be accomplished by grouping SSCs (e.g., by function). The staff does not envision a list that includes the identity of each component (such as each containment penetration with identification number).

The staff believes that the annual reporting requirements of 10 CFR 54.37(c) should not place an unwarranted burden on renewal licensees. The requirements of the rule require a safety evaluation summary of such changes and are explicitly focused on changes to specific commitments made in the renewal application. Since, for many SCs, programs already required by regulation or technical specification will be used to support the demonstration of effective programs in the application, the safety rationale supporting any license amendments related to these programs will also support reports required by 10 CFR 54.37(c).

### Fatigue and Environmental Qualification of Electrical Equipment

While preparing the implementation guidance for license renewal in the SRP, the staff found several significant issues related to fatigue resistance and environmental qualification of electrical equipment (EQ). A key aspect of the issues related to both fatigue and EQ was whether the licensing bases, particularly for older plants whose licensing bases differ from newer ones, should be reassessed or enhanced in connection with license renewal or whether they should be reassessed for the current license term.

The staff reexamined and reaffirmed that the current licensing basis is carried forward into the renewal period and that the NRC's regulatory processes will provide assurance that, except for ARDUTLR, the CLB will be maintained throughout the renewal term. The staff's regulatory processes require that potential generic issues, such as fatigue and EQ, be evaluated for backfit in accordance with 10 CFR 50.109. Where a facility's current licensing bases includes time-dependent elements, some additional analyses and/or actions may be needed to demonstrate that the CLB requirements continue to be satisfied in the renewal term.

As a result of its evaluation of the technical adequacy of fatigue and EQ requirements for renewal in 1992, the staff identified generic issues that should be evaluated for backfit during the current license term. The staff is developing interoffice action plans to address upgrading fatigue and EQ requirements for older plants. These plans will integrate ongoing research and licensing reviews to ensure timely resolution.

### Form of Renewal License

The staff reviewed the form of the renewal license (i.e., a new license or an amendment to the current operating license) and its impact on technical requirements for license renewal. The staff has reaffirmed the position that the form of the license does not affect the scope of the technical issues to be reviewed or the safety evaluations required to be performed. The scope and criteria of the staff's review for license renewal and the scope of license renewal hearings are unaffected by the rule's stipulation that a renewed, rather than an amended, license be issued in connection with NRC authorization for extended operation. Neither the rule nor staff activities in developing regulatory guidance presume that the form of the renewal license affects what is technically necessary for license renewal.

NUMARC-Sponsored Industry Reports

The staff reviewed the status of the NUMARC-sponsored industry reports (IRs). Ten IRs address aging issues associated with specific structures and systems, and one IR on IPA screening methodology. The original intent of the IRs for specific structures and systems was to serve as a referenceable surrogate for carrying out the IPA requirements of the license renewal rule. The staff has been reviewing the IRs to develop safety evaluation reports (SERs).

To best use the technical information and agreements from the NUMARC program, the staff plans to follow a new approach for handling the IRs. Instead of writing an SER for each IR, the staff plans to incorporate appropriate technical information from the IRs into the draft SRP for license renewal. This approach is expected to result in a single document that will include IR insights and establish the staff's review acceptance criteria. It is also expected to result in more efficient use of staff resources.

Conclusions:

The staff's conclusions are the following:

1. The license renewal rule does not need to be changed. The rule, including its two key principles, is logical and practical, and provides a sound basis for safe operation beyond the 40-year term of the original operating license.
2. The license renewal review begins with a defined broad scope but enables the applicant to quickly focus on important equipment that could be negatively affected by aging in the renewal term.
3. The proposed approach for implementing the IPA (a) is consistent with the rule, (b) is technically sound, (c) provides an appropriate integration of the MR and LRR requirements, and (d) will enable both the NRC and the applicant to use their resources efficiently.
4. The scope of ITLR SSCs, including those subject to operability requirements contained in TS LCOs, is defined in the rule and any change would require a rule change. Changes to remove TS LCOs which are not safety significant can be effected outside of license renewal. The proposed IPA approach will result in most SSCs subject to TS LCOs being identified as currently subject to effective programs without the need for detailed analyses.

5. In conducting the IPA, ARDUTLR should be viewed broadly and the IPA should focus on effective programs rather than the identification of aging that is or is not unique to the renewal term. Although SCs may be demonstrated as not being subject to ARDUTLR, as defined in the rule, such a demonstration would require a detailed analysis by the applicant and review by the NRC staff for each SC. The focus of the proposed IPA approach (i.e., on program effectiveness) is a more appropriate and efficient approach.
6. Programs that involve, in part, performance and condition monitoring can be structured so that they can be relied upon to demonstrate that aging is being effectively managed.
7. The IPA can be carried out so that a large majority of SCs can be demonstrated to be included in existing effective programs as evidenced by (a) the equipment being addressed by regulation or in facility technical specifications, with specified acceptance criteria for performance or condition; and (b) inclusion in the maintenance rule scope and requirements.
8. Issues, including those related to fatigue and EQ, that involve the adequacy of the CLB will be addressed as potential safety issues within the existing regulatory process. Where a facility's current licensing bases includes time-dependent elements, some additional analyses and/or actions may be needed to demonstrate that the CLB requirements continue to be satisfied in the renewal term.
9. The level of detail required for information in the application, and for future reporting, is appropriate and does not result in unwarranted administrative burdens. Specifically, (a) ITLR SSCs can be identified in the application by means of appropriate groupings rather than the identification of each piece of equipment, (b) reporting requirements for listed ITLR SSCs are applicable to additions and deletions and should not result in additional burdens, (c) requirements in 10 CFR 54.37(c) for annual reporting of changes will not result in unwarranted burdens for renewal licensees.
10. The form of the renewal license does not affect the scope of the technical issues reviewed or the safety evaluations required.

11. The areas of technical agreement in the industry reports should be incorporated in the standard review plan instead of SERs.

Coordination: The Office of the General Counsel has no legal objection to this paper and is preparing a separate paper to address the legal issues associated with the approach discussed in this paper.

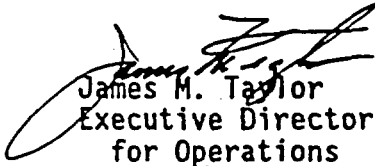
Recommendations: That the Commission:

1. Approve the staff's proposed approach for implementing the integrated plant assessment provisions (10 CFR 54.21(a)) of the license renewal rule including; a broad view of ARDUTLR, a focus on program effectiveness and minimization of documentation for SCs that are already included in an effective program.
2. Approve the staff's positions on the level of detail required in an application.
3. Approve the staff's approach for handling the NUMARC industry reports.
4. Note that, prior to meeting with the Commission, the staff will conduct a public meeting to discuss the proposed positions contained in this paper. The public meeting will be scheduled in mid-March 1993. If we find a need to change our recommendations as a result of the public meeting we will promptly inform the Commission.

On receiving approval from the Commission for recommendations 1, 2, and 3 above, the staff will begin revising both the draft regulatory guide and draft standard review plan to incorporate these recommendations. Additionally, in conducting our initial activities to implement this approach, the staff will inform the Commission of any new issues which are identified.

The staff is developing interoffice action plans to address the upgrading of requirements pertaining to fatigue and EQ for older plants. These plans will integrate ongoing research and licensing reviews to ensure timely resolution.

Unless the Commission directs otherwise, within 1 day from the date of this paper, the staff will release this paper to the public to facilitate public and industry review before the upcoming Commission briefing which is being scheduled for late-March 1993.\*

  
James M. Taylor  
Executive Director  
for Operations

Enclosure:  
IPA approach

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Monday, March 15, 1993.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Monday, March 8, 1993, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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\* As of March 3, 1993, this meeting is scheduled for Monday, March 15, 1993, at 2:00 p.m.

## INTEGRATED PLANT ASSESSMENT

Figure 1 illustrates the integrated plant assessment (IPA) flow path required by the rule at 10 CFR 54.21(a). Preliminary staff estimates of the disposition of systems, structures, and components (SSCs) within the IPA are indicated on the figure.

The staff's proposed approach for implementing the IPA is consistent with the requirements of the rule. All plant equipment would initially be included. SSCs defined in the rule as important to license renewal (ITLR) would be identified at the first step of the IPA, "54.21(a)(1): Scope Review." The scope of ITLR equipment defined in the rule is broad and encompasses more than safety related SSCs, including equipment subject to operability requirements contained in facility technical specification limiting conditions for operation (TS LCOs). Equipment that directly supports SSCs subject to TS LCOs would also be initially identified as ITLR.<sup>1</sup> The staff estimates that approximately 30 percent of plant SSCs would be eliminated from the IPA at this step.

At the second step, "54.21(a)(2): Functional Review," equipment that is part of ITLR systems or structures but that is determined not to be needed to support ITLR functions would be eliminated from the IPA. The staff estimates that only about 5 percent of plant structures and components (SCs) would be eliminated at this step.

The third step of the IPA, "54.21(a)(3): Uniqueness Review," involves the identification, from among the remaining ITLR SCs, of SCs that are not unique and those which could have age-related degradation that is unique to license renewal (ARDUTLR). Age-related degradation that is unique to license renewal is defined in 10 CFR 54.3 and is focused on the effects of the degradation. The definition of ARDUTLR is broad and includes degradation whose effects were not explicitly identified and evaluated by the licensee for the period of extended operation and the evaluation found acceptable by the NRC. Since the effects of age-related degradation during the period of extended operation, for the most part, will not have been explicitly considered, most of the SCs identified in the uniqueness review will be identified as SCs that could have ARDUTLR. This step allows a licensee to forward a technical rationale for its conclusion that an SC could not have ARDUTLR. The staff believes that few SCs would be eliminated from the IPA as not subject to ARDUTLR.

Figure 2 illustrates how the uniqueness review would be carried out. In demonstrating that an SC is not subject to ARDUTLR a detailed justification, submitted to the staff previously or included in the license renewal application, would be required. Two types of potentially acceptable justifications

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<sup>1</sup> Current regulatory practice for TS LCOs defines the necessary criteria that must be satisfied for an SSC to be operable or to have operability. Specifically, an SSC is operable when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication, or any other auxiliary equipment that is required for the SSC to perform its function(s) is also capable of performing their related support functions.

of no ARDUTLR could be provided. Long-lived SCs could be evaluated by means of analyses and/or inspection to demonstrate that very little age-related degradation is occurring and that no future actions are needed to manage aging through the renewal term. Assuming NRC agrees with this conclusion, no further IPA review or licensing action would be required.

Additionally, for short-lived SCs, a demonstration of no ARDUTLR could be made on the basis of existing plant replacement programs that are implemented at fixed intervals. Such identification would, however, require an applicant to provide detailed SC-specific justification in the application. The staff expects that the justification for conclusions that such equipment has no ARDUTLR will be based on commitments for continuing licensee action to periodically replace the equipment. As provided in 10 CFR 54.33(b), the staff can include license conditions and technical specifications as necessary to ensure that licensee actions will be continued so that equipment will not experience ARDUTLR. In determining whether or not technical specifications or license conditions are necessary, the staff will consider such factors as safety significance, the nature of administrative controls on commitments and changes to commitments, and reporting requirements.

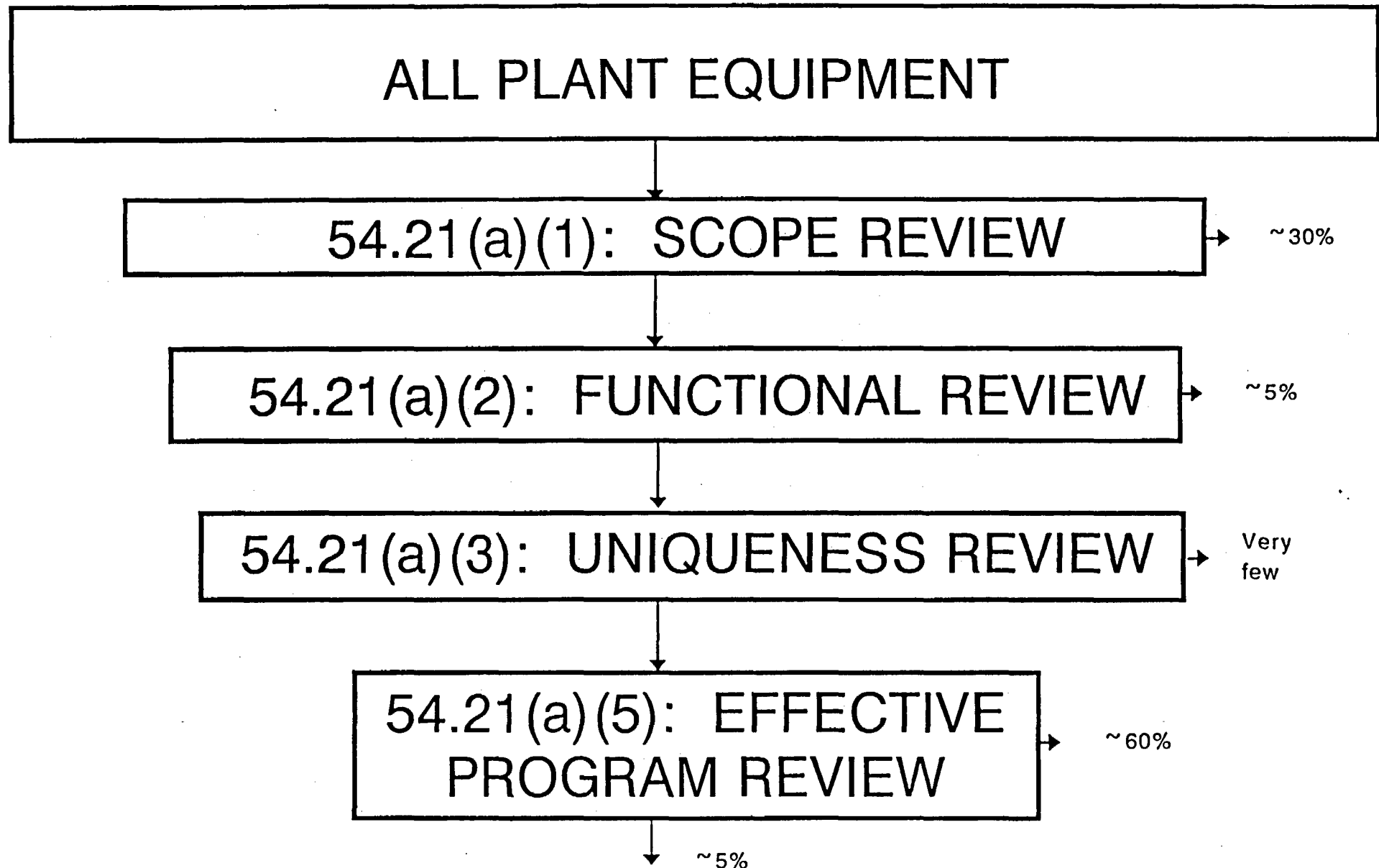
The staff's recommended approach is focused on the "54.21(a)(5): Effective Program Review" as the principle mechanism for addressing SCs which (1) are already subject to performance or condition monitoring programs for managing the effects of aging, or (2) may require new or enhanced programs. The staff estimates that the IPA approach would result in most plant SCs being identified as already subject to effective programs with minimal documentation in the application. Another group of SCs would be screened out as part of an existing effective program, however, the application would need to identify and justify the acceptance criteria, corrective action requirements and facility review, and procedure controls. Much of this could be done by generic groupings of SCs.

Figure 3 presents additional information on the conduct of the "54.21(a)(5): Effective Program Review." SCs identified as (1) subject to technical specifications or regulations, with specified acceptance criteria for performance or condition, and (2) included in the maintenance rule scope and requirements could be demonstrated to be addressed by existing effective programs. These criteria ensure that SCs are subject to formal regulatory requirements that will effectively manage the effects of aging through the renewal term. As previously noted, the staff estimates that a significant majority of plant SCs would be eliminated from further evaluation on this basis. An application would need to contain minimal documentation to address these criteria. Additionally, since the programs for these SCs are already subject to established NRC change and reporting requirements, the 10 CFR Part 54 change and reporting requirements would not be applicable.

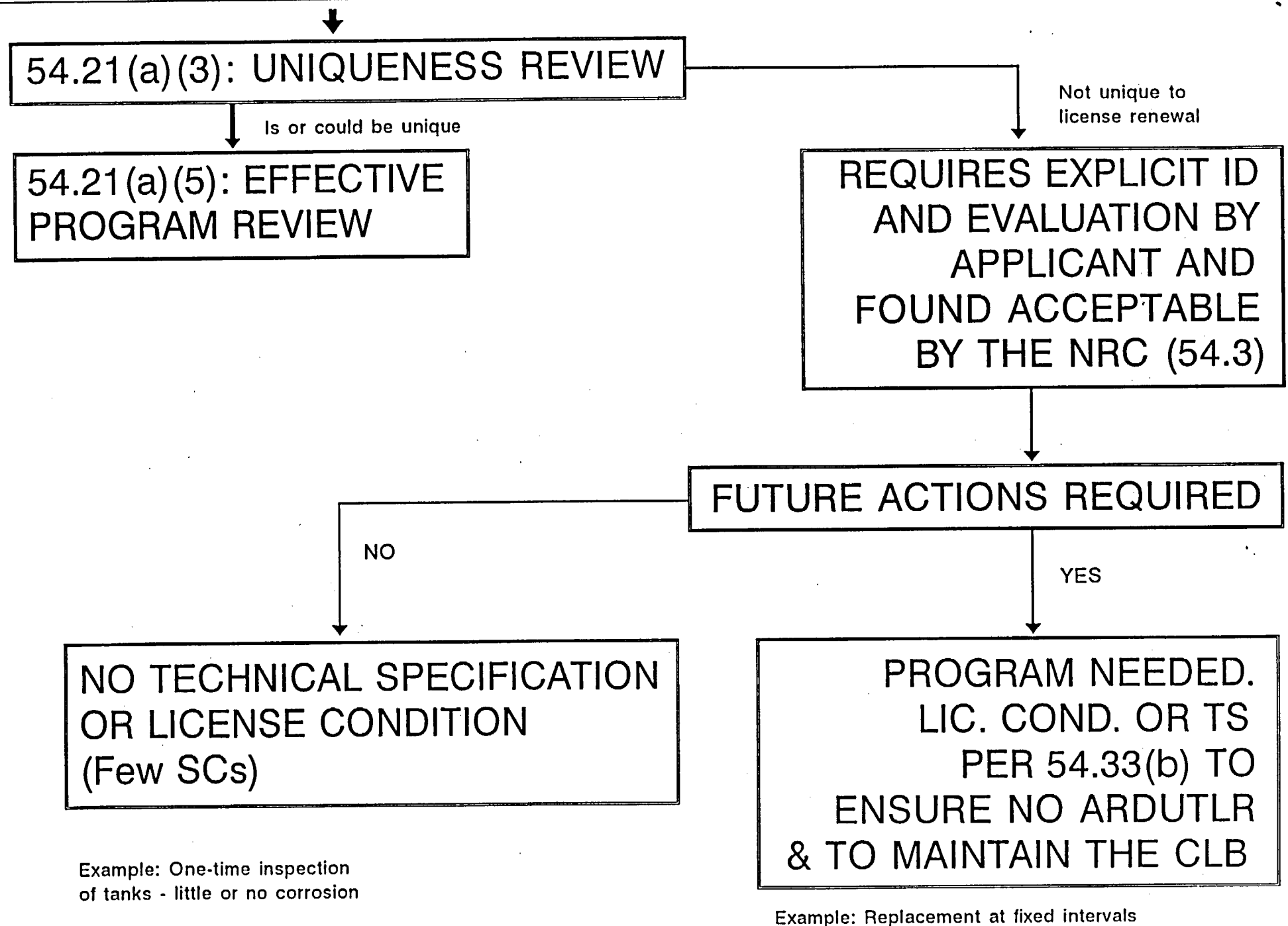
As indicated on Figure 3, the staff estimates that the remaining plant SCs, approximately 5 percent, would require additional evaluations as a result of one of two situations. Information will need to be provided (1) to establish the effectiveness of any new programs determined to be necessary or (2) to justify that no actions are needed to manage aging effects for some SCs.



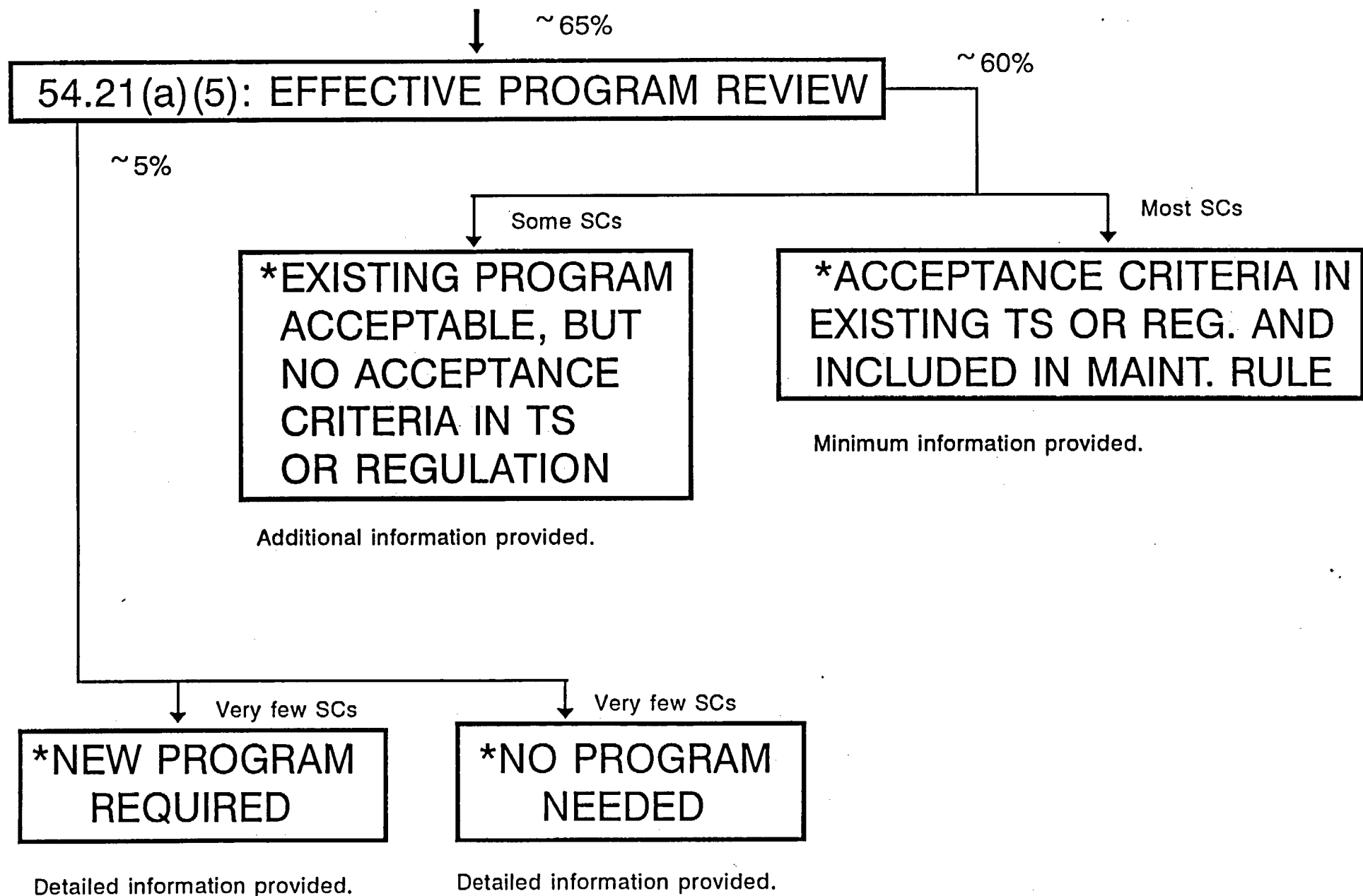
FIGURE 1: INTEGRATED PLANT ASSESSMENT (IPA)



# FIGURE 2: UNIQUENESS REVIEW



# FIGURE 3: EFFECTIVE PROGRAM REVIEW



\* Must ensure CLB is maintained during renewal period