



May 29, 1986

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

SECY-86-164

For: The Commissioners

From: Victor Stello, Jr.  
Executive Director for Operations

Subject: PROPOSED RULE ON THE IMPORTANT-TO-SAFETY ISSUE

Purpose: To obtain Commission approval of proposed definitions of safety-related, important-to-safety, facility licensing documents, and normal industry practice and obtain additional Commission direction on the rulemaking option to be followed.

Category: This paper covers a significant policy issue.

Issue: This paper is the first step in implementing the Commission's decision to initiate rulemaking In the Matter of Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1) CLI-84-9, 19 NRC 1325 (June 5, 1984).

Background: In the Shoreham licensing decision (CLI-84-9, 19 NRC 1323, June 5, 1984) the Commission directed the staff to prepare a rulemaking package to resolve the issue concerning the definition and usage of the terms "safety-related" (SR) and "important-to-safety" (ITS). Subsequent to this Commission direction, the Utility Safety Classification Group petitioned (October 30, 1984) the NRC to define these terms in its regulations. In response to the Commission direction, on December 20, 1984, the staff provided an information paper, SECY-84-476, to the Commission concerning the steps the staff was taking to implement the Commission's directives in the area of equipment "important-to-safety." At that time, the staff informed the Commission that, after further discussion with interested industry groups, the staff was planning to go forward with a Notice of Proposed Rulemaking to the Commission for its decision in early 1985.

On January 31, 1985, a meeting was held between representatives of the Atomic Industrial Forum (AIF), the Utility Safety Classification Group (USCG) and the NRC staff concerning the important-to-safety issue. The staff and the industry representatives agreed that the interpretation of the term

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"important-to-safety" in General Design Criterion-1 to 10 CFR 50, Appendix A, and elsewhere in Part 50, only needed to be clarified to reflect the statement of past practice adopted by the Commission in the Shoreham decision.

On April 5, 1985 the staff presented the Commission with a proposed rulemaking package (SECY-85-119) which embodied the agreed upon interpretation, i.e., normal industry practice is acceptable for important-to-safety items that are not safety-related unless otherwise specified in licensing documents.

On December 31, 1985, the Office of the Secretary issued a Staff Requirements Memorandum which stated that the Commission had disapproved SECY-85-119, and that the proposed rule did not adequately differentiate nor clarify the terms important-to-safety and safety-related. Additionally, in the SRM the Commission requested the staff to address or clarify particular aspects of the issue, with Commissioner Asselstine requesting that two additional concerns be addressed.

Discussion:

The December 31, 1985 Staff Requirements Memorandum (SRM) directed the staff to resubmit a revised proposed rule based on the guidance provided by the Commission. The staff is providing a revised Commission Paper for the Commission's consideration. This paper provides revised definitions of important-to-safety and safety-related, defines normal industry practice and facility licensing documents, and requests Commission approval of these definitions prior to developing the proposed rulemaking package.

As the staff understands the SRM, there are two basic issues involved: (1) what equipment should be classified as ITS, and (2) what requirements are imposed on this class of equipment. The staff has grouped the Commission's requests, guidance, and questions that appeared in the SRM into five general requests as listed below. The staff believes that the two basic issues have been addressed within the responses that follow.

1. Clarify the definitions of "important-to-safety" and "safety-related."
2. Define "normal industry practice."
3. Develop criteria for determining what equipment is ITS on a plant-specific basis.
4. Review the usage of the terms ITS and SR in 10 CFR for consistency and propose appropriate modifications if the usage is not consistent.

5. If any new requirements are imposed, the appropriate back-fitting procedures will be used.

A discussion of the staff's response to and recommendation on each of these requests follows:

1. Clarify definitions of Important-to-Safety and Safety-Related

The Commission's guidance contained in the SRM concerning clarifying the definitions of "safety-related" and "important-to-safety" keyed on clarifying that "safety-related" is a subset of "important-to-safety" and the concept that the staff had required some "specialized treatment" in the plant's licensing documents for equipment "important-to-safety."

To stress the fact that "safety-related" is a subset of "important-to-safety," the staff has revised the definition of "safety-related" to specifically state "...safety-related is a subset of important-to-safety..." This action divides the general category of important-to-safety into two subsets, important-to-safety/safety-related (ITS/SR) and important-to-safety/non-safety-related (ITS/NSR).

The staff proposes the following definition of safety-related:

"Safety-Related" is a subset of important-to-safety, and, when referring to structures, systems, and components, means those structures, systems, and components that are relied upon to remain functional during and following design basis events to ensure:

- (1) The integrity of the reactor coolant pressure boundary;
- (2) The capability to shut down the reactor and maintain it in a safe shutdown condition; or
- (3) The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10 CFR Part 100 guidelines.

A literal interpretation of the SRM would result in the following definition of important-to-safety:

"Important-to-safety" when referring to structures, systems, and components means those structures, systems, and components for which the NRC staff has required the application of some specialized treatment in the facility licensing documents or generic regulatory requirements. Requirements imposed on important-to-safety items are only those which were specifically required by inclusion in the facility licensing documents or in generic regulatory requirements.

In order to assess the SRM guidance concerning the use of "specialized treatment," the staff reviewed the Final Safety

Analysis Reports (FSARs) and selected portions of the other licensing documents for two nuclear power plants, Rancho Seco and River Bend. The purpose of the review was to determine what items that the staff traditionally considered "important-to-safety" would not be encompassed as such using the "specialized treatment" criteria. For this review the staff considered specialized treatment to include references in the licensing documents to codes, standards, seismic design or qualification provisions, missile hazard prevention provisions, fire protection provisions, special calibration, testing, maintenance or inspection provisions, and any quality control or quality assurance provisions.

Documents submitted by the licensee in support of the application for an operating license were considered the facility licensing documents, i.e., documents submitted after the license was issued were not considered unless they were a condition of the license.

For Rancho Seco, the integrated control system, and the main turbine trip and control systems are examples of systems that are described in the FSAR but for which no "specialized treatment" is specified in the FSAR or the other licensing documents reviewed. The staff believes these systems are clearly important-to-safety as their failure would cause transients that would challenge the plant's safety-related systems.

For River Bend, the feedwater control system and the rod control and information system are examples of systems or components described in the FSAR but for which no "specialized treatment" exists in the FSAR or the other licensing documents reviewed and which the staff believes are important-to-safety.

Based on this review the staff believes the guidance in the SRM, if strictly followed, would not include systems that the staff considers "important-to-safety" nor would it make clear that the Commission expects that normal industry practice would be followed for these systems when "specialized treatment" has not been specified. The staff, with its limited resources, does not review every detail of an application and assure that the appropriate treatment is given to each ITS/NSR item. The staff review presumes that a body of good practice exists for plant structures, systems and components whether or not explicit specialized treatment is specified in the facility licensing documents.

Under this narrow definition of ITS proposed by the SRM, the systems listed above could be excluded from the category of ITS and therefore be beyond the requirements of the general design criteria (10 CFR 50, Appendix A). This could weaken the basis for taking action on safety concerns for any equipment for which specialized treatment is not required in facility licensing documents.

As an alternative to the SRM definition, the staff proposes the following definition of "important-to-safety:"

"Important-to-safety" when referring to structures, systems, and components means those structures, systems, and components that are described in the facility licensing documents and that provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public.

The staff further would define facility licensing documents for the staff definition as follows:

"Facility licensing documents" are those documents that comprise the application and associated proceedings; NRC regulations; Final Safety Analysis Report; NRC orders; license conditions; and written licensee commitments to the NRC.

The staff's approach encompasses all the equipment, information, and commitments that served as a basis for issuing an operating license or a construction permit and for allowing continued operation or construction. There is, however, the possibility that for some plants not all equipment that the staff presently considers ITS is described in the facility licensing documents. Under the NRC's current regulatory requirements, a requirement by the staff to add a description to the FSAR for this equipment would be subject to a backfit analysis.

The Commission should note that although increased emphasis is being placed on ITS/NSR equipment because of recent operational events, the NRC inspection program has been and continues to be primarily focused on ITS/SR equipment due to resource limitations and the presumption that a body of good practice exists for plant structures, systems and components. The staff does not foresee a change in the level of inspection effort expended on ITS/NSR equipment solely as a result of this rulemaking.

## 2. Define Normal Industry Practice

The staff considered two options in responding to the Commission's request to define "normal industry practice:"

- (a) using the ATWS QA guidance previously developed for "important-to-safety but not safety-related" equipment or
- (b) develop new guidance which generally describes the

staff's interpretation. The staff considered the ATWS QA guidance as it is reasonably specific and already applies to some equipment falling in the ITS/NSR category. However, the staff determined that the application of the ATWS guidance to the entire ITS/NSR category may constitute a backfit for some equipment at some plants. The staff believes that a substantial effort would be required to develop a suitable backfit analysis and considers it doubtful that such an analysis would support the imposition of the guidance. Therefore, the staff concluded that such an imposition of the ATWS QA guidance on all ITS/NSR items would be inappropriate.

As an alternative, the staff proposes the following definition of "normal industry practice:"

"Normal Industry Practice" when referring to structures, systems, and components important-to-safety but not safety-related (ITS/NSR), means that these items are: (1) designed, constructed, operated, inspected, tested, and maintained in accordance with applicable nuclear or non-nuclear codes and standards, and vendor- or manufacturer-supplied information or recommendations; (2) replaced with parts assured to be of at least the same quality as the original parts through inspections, tests, evaluation, or audits; and (3) evaluated to establish root causes and necessary corrective actions for any nonconforming items or operational performance problems that occur.

Based on the information gathering visits that have been made concerning licensees' handling of ITS/NSR structures, systems, and components, the staff considers that this description of normal industry practice describes the intent, if not in every case the practice, at operating plants.

Enclosure 1 to this paper provides examples of the maintenance, operation, and inspection aspects of normal industry practice for emergency power diesel generators and valve motor operators. This information is provided to show the level of detail that the staff considers acceptable in describing "normal industry practice" for ITS/NSR equipment. Although emergency power diesel generators are classified as safety-related by licensees, General Motors provides the diesels as commercial grade to a customer who assembles the diesel generator unit. The enclosed diesel vendor information is illustrative of the level of detail specified by vendors for complex equipment and is illustrative of "normal industry practice."

The Commission should note that neither current regulations nor the proposed rule, as presently perceived, would require licensees to comply with this definition of normal industry practice, although as stated above it is the opinion of the staff that most licensees already comply. If the Commission determines that compliance with this definition should be explored, the staff will make appropriate modifications to the proposed rule and prepare the requisite backfit analysis.

3. Develop Criteria for Determining what Equipment is ITS on a Plant Specific Basis

On the issue of guidance for determining what equipment is important-to-safety, the SRM stated that a list of equipment ITS/NSR is not required; that for NTOLs, equipment ITS/NSR could, in general, be determined during the normal licensing process; that it is not the intention of the rule to add new requirements; and that criteria for determining what equipment is ITS/NSR on a plant-specific basis should be developed.

To date neither the licensees nor the staff has compiled a list of ITS/NSR equipment. The licensee's FSARs contain descriptions of both ITS/SR and ITS/NSR structures systems, and components. The descriptions usually clearly state which equipment is ITS/SR but licensees have not specifically identified equipment which is ITS/NSR. The staff in their review of licensee's FSARs have, to date, including NTOLs, concentrated on structures, systems, and components which are ITS/SR. The Safety Evaluation Reports (SERs) issued by the staff specifically cover ITS/SR equipment. However, issuance of an SER does indicate general acceptance of the Safety Analysis Report. Therefore, although ITS/NSR equipment has not been specifically identified as such, equipment contained in the category ITS/NSR can generally be determined by using the staff's definitions of ITS and facility licensing documents. To do so would be a major undertaking for an individual licensee.

The staff also reviewed the dockets for those plants that have not received an operating license but are actively pursuing completion of the plants. For all plants except Bellefonte 1 & 2 and WNP 1 & 3, the staff has issued a Safety Evaluation Report thereby establishing what structures, systems, and components are ITS. Therefore, due to the small number of plants that would be affected by the proposed definitions, the staff proposes that for all currently docketed plants that ITS equipment be that which is or will be described in the facility licensing documents, as per the previously cited definition.

#### 4. Review Usage of Terms ITS and SR

The staff has reviewed the use of the terms "safety-related" and "important-to-safety" in 10 CFR and concluded that the use of the terms is not internally consistent nor is it consistent with the proposed definitions. "Safety-related" appears 39 times and "important-to-safety" appears 126 times.

A clear example of a use inconsistent with the proposed definition of "important-to-safety" appears in General Design Criterion 2; "Structures, systems, and components important-to-safety shall be designed to withstand the effects of natural phenomena such as earthquakes ...without loss of capability to perform their safety functions...." In general, the staff has required that ITS/SR equipment meet this requirement, but most of the ITS/NSR equipment does not. As such, the proposed definition of ITS would tend to imply that all ITS equipment must be designed to operate after a design basis earthquake which is not intended by the staff. However, a direct substitution of "safety-related" for "important-to-safety" would not encompass certain aspects such as non-Category I seismic design requirements. Similarly, the adequacy and reliability of offsite power would not be encompassed by changing "important-to-safety" to "safety-related" in other General Design Criteria.

Due to the magnitude of the problem and the difficulties involved in developing acceptable alternatives, the staff has not pursued the issue of consistent usage of these terms. There are four options available to the Commission in implementing the definitions of important-to-safety and safety-related:

1. Withhold issuing a notice of proposed rulemaking on the proposed definitions until the rest of 10 CFR can be appropriately modified to be consistent with the proposed definitions. These usage changes would then be published with the proposed definitions in the same proposed rule.
2. Withhold issuing a notice of proposed rulemaking on the proposed definitions until 10 CFR Part 50 can be appropriately modified to be consistent with the new definitions. These usage changes would then be published with the proposed definitions in the same proposed rule.

3. Issue a notice of proposed rulemaking on the proposed definitions, review the public comments, finalize the definitions, receive Commission endorsement of the definitions and then prepare a second notice of proposed rulemaking on the appropriate changes to 10 CFR or 10 CFR 50 based on the final definitions.
4. Issue a policy statement announcing the Commission's adoption of the definitions and forego rulemaking.

The first option would attempt to achieve consistency in the usage of the terms safety-related and important-to-safety throughout the regulations. However, this effort would entail revising portions of Parts 2, 21, 34, 50; General Design Criteria 2, 3, 4, 5, 16, 17, 18, 44, 54 and 61 contained in Appendix A to Part 50; Appendix R to Part 50; and portions of Parts 60, 71, 72 and Appendix A to Part 100. It is the opinion of the staff that the two areas where the usage problem would be most difficult to resolve are the General Design Criteria and the inconsistencies between the parts of the regulations concerning production and utilization facilities versus the parts of the regulations concerning waste repositories, independent spent fuel storage facilities, and packaging and transportation of radioactive material. Additionally, the safety concerns and equipment involved are sufficiently different between production and utilization facilities and the waste repository, independent spent fuel storage, and transportation areas that different definitions and use of terminology between these areas will not create any significant loss of clarity. Moreover, the term safety-related is not used in regulations applicable to waste repositories, independent spent fuel storage, and transportation areas. The term important-to-safety, as it applies to these areas, is specifically defined in each of the relevant subparts of 10 CFR. Therefore, there is no uncertainty over the present usage of these terms in these portions of the regulations. For these reasons, the staff considers it unnecessary and inappropriate to attempt making the definitions and usage of the terms important-to-safety and safety-related consistent throughout 10 CFR. Additionally, any attempt to do so would take an effort substantially in excess of the other options and would not be the most appropriate use of staff resources. If extensive public comments are received that necessitate revision of the definitions, the effort would, in effect, have to be undertaken a second time.

The staff does not recommend the Commission approve this option.

The second option would resolve the issue of safety-related versus important-to-safety for the regulations concerning production and utilization facilities (principally power reactors). This is the area where the issue was originally raised and where the lack of definitions and consistent usage have created uncertainty. Additionally, the equipment involved and the rules governing that equipment are sufficiently different between production and utilization facilities and the waste repository, independent spent fuel storage, and transportation areas that different definitions and use of terminology between these areas will not adversely affect the regulatory environment. Restricting the rule-making to those portions of 10 CFR concerning production and utilization facilities would reduce the areas considered difficult to resolve by the staff to General Design Criteria (GDC) 2, 3, 4, 5, 16, 17, 18, 44, 54 and 61. To fully resolve the usage problem it may be necessary to take the guidance currently contained in the Standard Review Plan and applicable Regulatory Guides and place that information in the GDC.

The staff currently estimates that this option would take two to three years and involve approximately two FTE per year just to issue the proposed rule. If extensive public comments are received that necessitate revision of the definitions, the effort would have to be repeated.

The staff recommends that any rulemaking be restricted to those parts of 10 CFR that concern production and utilization facilities.

Option three would postpone any action on resolution of the usage problem until the staff has had the benefit of public comments on the proposed definitions and the final definitions had received Commission approval. This option would have the advantage of early public comments on the proposed definitions with a very limited impact on staff resources and would also avoid the possible situation of having to attain staff agreement on the necessary modifications to the regulations twice. The disadvantage of this option is that the public would not have the benefit of reviewing the proposed definitions and the proposed revisions in the use of the definitions at the same time.

The staff believes that adopting this option would eliminate the possibility of having to revise the regulations twice, once to issue a proposed rule and the second time to address any changes to the definitions and their use resulting from public comments.

The Commission should note that this option can be pursued regardless of whether the Commission elects to restrict the rulemaking to those sections of the regulations that concern production and utilization facilities or elects to have the rulemaking cover all of 10 CFR.

The fourth option would forego rulemaking on this subject. The Commission would issue a policy statement announcing the adoption of the proposed definitions without any changes to the existing regulations. The advantages of this approach are the relatively short time span required, the very limited impact on staff resources, the clear establishment of a class of equipment that is important-to-safety but not safety-related, and a statement of the Commission's expectation that a standard of normal industry practice will be followed for such equipment. The disadvantages of this option are the lack of public comment and the possible continuing uncertainty among licensees resulting from the mixed usage of terms in the 10 CFR 50, Appendix A General Design Criteria.

5. Imposition of Backfit Procedures for New Requirements

In response to Commissioner Asselstine's request that the staff consider a rulemaking which would allow additions to or deletions from the scope of ITS equipment based on new information or analyses without applying the backfit rule, the staff considers a backfit analysis appropriate prior to requiring any additional equipment be classified important-to-safety for currently licensed plants. However, licensees may voluntarily amend their FSARs (after an appropriate 50.59 review) or make changes to the scope of ITS equipment as a result of operational events or other factors.

With respect to Commissioner Asselstine's request that the staff consider a rulemaking for future plants so that confusion and uncertainty do not persist and so that standardization can be enhanced, the staff prefers to wait to accumulate experience with the proposed definitions before considering further rulemaking. The staff anticipates that any existing confusion or uncertainty will be taken care of by the definitions proposed by this paper and the fact that current treatment of existing plant equipment will not change.

The importance of increased attention to ITS/NSR plant equipment was recently emphasized in an EDO memo dated November 26, 1985 on NRC lessons learned in the Davis Besse event:

"The paramount importance of proper maintenance in maintaining levels of reliability assumed in the safety analyses that form the licensing basis for operating plants has been accorded greater recognition and increased emphasis and attention by both NRC and utility management in the aftermath of the TMI accident. However, it appears from the circumstances noted in the review of the June 9 Davis-Besse event that an inappropriate, artificial distinction between the importance of safety-related vs nonsafety-related plant features may have led some licensees to place inadequate emphasis on proper maintenance of all equipment necessary to assure proper facility operations. Some balance-of-plant systems may actually have equal or perhaps greater safety importance (cumulatively) than equipment classified as safety-related because their too-frequent failure can needlessly challenge the safety-related systems, and their failure can also aggravate conditions under which the safety-related systems must respond. We need to give increased attention to assuring that the attention of licensee management is focused properly on this important aspect of plant operations and that important balance-of-plant systems and equipment receive adequate attention in the overall maintenance picture...."

The staff believes that the proposed definitions, while not in themselves imposing any new requirements, will bring to the attention of the industry the Commission's concern that a proper level of attention be paid to items which are not "safety-related" but which play a large role in assuring safe plant operation.

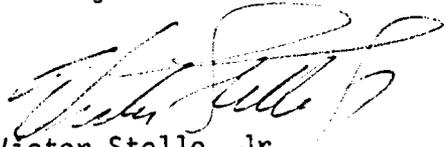
Recommendation:

That the Commission:

1. Approve the staff's proposed definitions of important-to-safety, safety-related, facility licensing documents, and normal industry practice.
2. Approve and direct the staff to proceed, on a long term basis, with option 2 while, in the short term, direct the staff to develop as discussed in option 4, a Policy Statement announcing the Commission's adoption of the definitions and intent to codify them.
3. Provide additional guidance to the staff as to whether licensee compliance with the proposed definition of normal industry practice should be required.
4. Note:
  - a. The staff does not recommend that the Commission pursue Option 1.

- b. That a Backfit Analysis has not been performed for this paper since it only requests Commission approval of proposed definitions and additional guidance. The staff will perform an appropriate Backfit Analysis if the Commission chooses the rulemaking option.
- c. That because this paper only requests Commission approval of proposed definitions and additional guidance, a Regulatory Analysis is not necessary. The staff will perform an appropriate Regulatory Analysis if the Commission chooses the rulemaking option.

Scheduling: If scheduled on the Commission agenda, I recommend this paper be considered at an open meeting.

  
Victor Stello, Jr.  
Executive Director for Operations

Enclosure:  
Examples of Normal Industry  
Practice

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Monday, June 16, 1986.

Commissioner Staff Office comments, if any, should be submitted to the Commissioners NLT Monday, June 9, 1986, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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