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Director of Nuclear Reactor Regulation  
Attention: Dr. W.R. Butler, Project Director  
Project Directorate I-2  
Division of Reactor Projects  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

USQUEHANNA STEAM ELECTRIC STATION  
EXPORTABILITY DETERMINATIONS  
LA-3449                      FILES R41-2/A17-10

Docket Nos. 50-387  
and 50-388

Dear Dr. Butler:

In recognition of the open dialogue throughout the nuclear industry on reportability of issues arising from design reconstitution efforts, PP&L would like to present its current approach. If you have any questions on the attached material, we would be happy to supplement this letter with a presentation.

Very truly yours,

H. W. Keiser

Attachment

cc: NRC Document Control Desk (original)  
NRC Region I  
Mr. M.C. Thadani, NRC Project Manager  
Mr. G.S. Barber, NRC Senior Resident Inspector

~~4-10-300000~~  
7pp

### REPORTABILITY OF DESIGN ISSUES

There is considerable debate within the nuclear industry today regarding reporting of design issues. The regulations are not clear on how to handle emerging concerns related to design. Licensees must use judgement to determine when an issue meets the threshold for reporting.

It has always been PP&L's policy to keep NRC informed of issues that have safety significance. To do this, we must follow a process that takes into consideration several factors: The regulatory requirements as codified; regulatory guidance provided by the NRC; and experience at PP&L and in the industry. This is an evolving process.

#### Interpretation of Reporting Requirements

PP&L believes that 10CFR50.72 and 50.73 are intended to require reports for plant events or conditions which are safety significant. Significance is clearly at the heart of reporting under 10CFR50.72/50.73. This theme is captured throughout the rule and its statements of consideration. For emerging design issues where significance is not initially obvious and where understanding of the issue evolves, 10CFR50.9 is an appropriate reporting mechanism once the issue has been validated and has reached an appropriate threshold. A subsequent 50.72/50.73 report would be required if the issue were later determined to meet those reporting requirements.

PP&L has and will continue to use the provisions of 10CFR50.72/50.73 for those design issues which either meet the criteria of being outside the design basis of the plant or create an unanalyzed condition that significantly compromises plant safety. To satisfy this requirement we are using two key considerations:

- The impact on the operability of the affected equipment, systems or structures;
- Whether or not an unreviewed safety question exists.

We believe this is consistent with the intent of 10CFR50.72/50.73 and is supported by the guidelines which exist in 10CFR50.59 for those design issues resulting in changes in the facility as described in the FSAR.

For emerging design issues where significance is not initially obvious and where understanding of the issue evolves, 10CFR50.9 is an appropriate reporting mechanism once the issue is validated and has reached an appropriate threshold.

We view this as an enhancement to our reporting process. It assures emerging issues are brought to the attention of the NRC prior to their becoming challenges to plant safety. The kinds of issues reported under 50.9 are those that:

- (a) Represent a potential significant challenge to the adequacy of the plant's design;
- (b) Have significant generic implications; or
- (c) Require substantial resources to address or resolve.

In summary, PP&L believes that design issues should be reported under 10CFR50.72/50.73 if the affected equipment is determined to be unable to perform its safety function or the issue creates an unreviewed safety question. In the absence of a more appropriate regulation, design issues that are not reported under 10CFR50.72/50.73 should be reported under 10CFR50.9 if they meet the criteria outlined above.

A more detailed basis for our process for determining reportability for design issues is attached.

REGULATORY ANALYSIS

There are two sections of 10CFR50.72/50.73 that need to be considered when evaluating design issues for reportability:

50.72(b)(1)(ii)  
(1-hour report)

50.73(a)(2)(ii)  
(LER)

*Any event or condition that resulted in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded, or that resulted in the nuclear power plant being:*

- (A) *In an unanalyzed condition that significantly compromised plant safety;*
- (B) *In a condition that was outside the design basis of the plant; or*
- (C) *In a condition not covered by the plant's operating and emergency procedures.*

50.72(b)(2)(iii)  
(4-hour report)

50.73(a)(2)(v)  
(LER)

*Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to:*

- (A) *Shut down the reactor and maintain it in a safe shutdown condition;*
- (B) *Remove residual heat;*
- (C) *Control the release of radioactive material, or*
- (D) *Mitigate the consequences of an accident.*

Engineering/design issues are not "events." However, they can represent "conditions" which would be reportable. Let us first examine the second section of the rule above which deals with safety function.

NRC's statements of consideration for these regulations stress that

*"The Commission recognizes that the application of this and other paragraphs of this section involves the use of engineering judgement on the part of licensees."*

When engineering/design issues are raised, their ultimate impact on the affected system or component is not generally understood. This must be investigated in light of the design basis of the system or component and the impact that the issue has on its capability to

fulfill its safety function. Early in our investigation we must make a determination as to the significance of the issue. The test of significance is the operability determination and/or the existence of an unreviewed safety question. When our judgement does not support a conclusion of operability, PP&L has taken appropriate conservative action including plant shutdowns where continued operation could not be justified. Where our judgement leads us to conclude that the system or component can still fulfill its safety function, it is appropriate to conclude that safety significance is probably low and that the system or component remains operable. If engineering judgement supports a determination of operability and there is no unreviewed safety question, then there is no requirement to report under 10CFR50.72/50.73.

Let us now return to the first section of 10CFR50.72/50.73 above which deals with significant degradation, unanalyzed conditions, and conditions outside the design basis. The rules require reporting any event or condition that resulted in the plant being:

(A) *In an unanalyzed condition that significantly compromised plant safety*

or

(B) *In a condition that was outside the design basis of the plant.*

It was noted very early that (A) contains specific words that focus on safety significance, but that (B) does not. However, this does not make sense to PP&L.

Although NRC separates the issue of "unanalyzed conditions" and "outside the design basis" in the rule, there is very little guidance regarding "outside the design basis". In NUREG-1022, there are only a few examples of reportable situations under this section of the rule, and in most of them, conditions outside the design basis appear to be equated with unanalyzed conditions. The NRC statements of consideration discuss only unanalyzed conditions:

*"The intent of this paragraph is to capture those events where the plant, including its principal safety barriers, was seriously degraded or in an unanalyzed condition."*

and

*"The Commission recognizes that the licensee may use engineering judgement and experience to determine whether an unanalyzed condition existed."*



However, there is one example, in Supplement 1 to NUREG-1022 (page 17) that addresses conditions outside the design basis:

"10.3        We are aware that a recent generic analysis of the rod drop accident applicable to our plant indicated that this event would exceed the value given in the FSAR. Further, the analysis indicated that the condition was fully acceptable and did not result in a serious threat to the plant. Is an LER required?

Answer:        The condition would be reportable as an LER if the analyzed rod drop had actually occurred and caused the plant to be in a condition outside the design basis of the plant. If such an event had not occurred the analysis alone would not be reportable as an LER but may be reportable under other NRC requirements. If the condition were reported as an LER, then the generic analysis should be discussed and referenced in the assessment of the safety consequences of the event [see 50.73(b)(3)]." (emphasis added)

This example implies that an event must actually occur to be reportable. It also indicates that new or revised analyses results which are different from results provided in the FSAR are not reportable as an LER. This example influenced some of our reportability judgements until the issuance of 50.9. When 50.9 was issued, we reduced our threshold and commenced reporting some additional design issues under the provisions of 50.9(b).

As noted above, our obligation to report design issues was impacted by the issuance of 10CFR50.9(b). This rule took effect February 1, 1988 and required that:

*"Each applicant or licensee shall notify the Commission of information identified by the applicant or licensee as having for the regulated activity a significant implication for public health or common defense and security."*

This regulation is entitled "Completeness and accuracy of information" and was intended to codify NRC's "material false statement" position. This is what 10CFR50.9(a) does, but the NRC statements of consideration explain an additional purpose for 10CFR50.9(b).



*"Paragraph (a) and paragraph (b) impose two distinct requirements. Paragraph (a) codifies an applicant's and a licensee's obligation to ensure accuracy and completeness of communications with the Commission or in records required by the Commission to be maintained. Paragraph (b) pertains to a licensee's obligation to report information identified by the licensee as significant, notwithstanding a non-reportability determination under other reporting requirements."*

Based on the above PP&L has been reporting certain additional design issues under 10CFR50.9(b) if they were determined to be of significance but non-reportable under 10CFR50.72/50.73.