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For: The Commissioners
From: Herzel H. E. Plaine
General Counsel
Subject: COMMENTS ON SECY-83-474
Facility: Three Mile Island, Unit 1
Discussion: Background and Conclusion

In SECY-83-474, the staff proposes to make a final finding of no significant hazards consideration (NSHC) on GPU's request for an amendment to allow TMI-1 operation after repair of the once-through steam generator (OTSG) by using methods other than those cited in the TMI-1 license. Adoption of the staff's recommendation would allow TMI-1 operation notwithstanding the pendency of a hearing before a Licensing Board on whether such operation would be safe. This memorandum responds to your request for our comments on the staff proposal.

The applicable statute and regulations have never been judicially construed and the standard and criteria are vague and capable of widely varying interpretations. The conclusion in SECY-83-474 is premised on an interpretation that presents serious legal problems. Therefore, we believe that SECY-83-474 does not persuasively demonstrate that there are NSHC involved with the OTSG amendment.

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The staff's finding that steam generator repairs at TMI-1 involve "no significant hazards consideration" on its face appears at obvious variance with the facts. The license amendment in question would allow Met Ed to operate TMI-1 with once-through steam generators (OTSG) in which damaged tubes have been sealed by explosive expansion against the tubesheet in which the tubes are mounted. The technical evaluation report provided by Franklin Research Center (FRC) characterizes this repair process in a manner which emphasizes both its novelty and its close relation to safety saying:

Although the repair process (described earlier) of kinetically expanding tubes onto tubesheets is not new, this is the first application of this method to repair a nuclear steam generator tube in what is, in metallurgical terms, a sensitized condition, i.e., grain boundary precipitation of carbides had resulted from the stress-relieving heat treatment applied to the generators following their original fabrication, which involved mechanical tube rolling and seal welding of the tubes on the outside surface of the tubesheet. Forming a new seal length below the old one and thus eliminating the upper cracked region of tubing from consideration is also a novel application. Finally, the tube/tubesheet crevices were in an oxidized or corroded state stemming from both service operation and idle downtime exposure.

Based upon the history of successful applications of the explosive expansion of tubes into a tubesheet, both in fabricating new heat exchangers and in repairing in-service ones, there did not appear to be any serious questions concerning the technical feasibility of the expansion process. Rather, efforts were concentrated on assuring that the procedure would be adequate ... to meet the tube/tubesheet qualification specifications for strength (pullout) and leaktightness, while at the same time not adversely affecting the structural

integrity or fatigue resistance of the generators as a whole.

TER-C5506-311/312/313, Attachment 1 to NUREG-1019, Supp. No. 1, pages 7 and 8.

What we gather from this language, which is likely to be cited in any court challenge to the staff's NSHC determination, is that issuance of the license amendment will require the staff to find that a repair technique never previously used in reactors and applied here to tubes in a "sensitized condition" can and will restore the TMI-1 steam generators to a condition that meets original licensing specifications. Important safety considerations such as leaktightness and structural integrity of the steam generators as a whole following such a repair are implicated in determining the merits of the amendment. Furthermore, resolution of these concerns is not simple or obvious. Apparently a substantial amount of effort by the licensee, by FRC, and by the staff has been necessary to reach the conclusion that the repaired generators will meet NRC safety requirements. Under these circumstances, in which a great deal of consideration has been given to a matter which has significant implications for safety, an after-the-fact finding that the amendment involves "no significant hazards consideration" is not intuitively persuasive. We believe a reviewing court may see this finding as an unreasonable interpretation of the Commission's regulations, or, if the court finds that the regulations actually do permit such a finding, the court may question whether the regulations comply with the underlying statute and congressional intent.

The staff has managed by a literal application of the Commission's regulations to reach an NSHC conclusion here, essentially by concluding that the plant has been returned to as safe a condition as it was prior to the corrosion and then reasoning that the amendment poses no additional safety risks and therefore NSHC.

The most obvious problem with this approach is that in applying the Commission's regulations the staff has impermissibly prejudged the merits of the amendment. This matter is discussed in detail below.

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The provision of the Atomic Energy Act in issue is section 189a. This section provides, in pertinent part, that:

The Commission may issue and make immediately effective any amendment to an operating license, upon a determination by the Commission that such amendment involves no significant hazards consideration, notwithstanding the pendency before the Commission of a request for a hearing from any person. Such amendment may be issued and made immediately effective in advance of the holding and completion of any required hearing. In determining under this section whether such amendment involves no significant hazards consideration, the Commission shall consult with the State in which the facility involved is located. In all other respects such amendment shall meet the requirements of this Act.

The legislative history of the statute provides that the no significant hazards consideration determinations "should not require the NRC staff to prejudge the merits of the issues raised by a proposed license amendment. Rather, they should only require the staff to identify those issues and determine whether they involve significant ... safety ... consideration."¹

The NRC's own description of the NRC draft legislative proposal, which is the source of the terminology in the statute as enacted, is even stronger on this point. Amendments involving no significant hazards consideration were described by NRC as those that "involve no significant questions of public health and safety" and do not "have much to do with safety." Hearings Before the Subcommittee on Nuclear Regulation, Senate

¹It is also similarly stated that the no significant hazards consideration "should represent a judgment on the nature of the issues raised by the license amendment rather than a conclusion about the merits of those issues." S.Rep. No. 97-113, 97th Cong., 1st Sess., at 15 (1981).

Committee on Environment and Public Works, 97th Cong., 1st Sess., March 25 and 31, 1981, at 138, 139, 149. The legislative history also states that "NRC staff [should] not resolve doubtful or borderline cases with a finding of no significant hazards considerations." Conference Report No. 97-884, 97th Cong., 2d Sess., at 37 (1982), quoted by NRC in its Notice of Rulemaking, 48 FR 14864, 50-SC-88 (April 6, 1983).

We believe that the statute and legislative history should be read to mean that "no significant hazards consideration" is the equivalent of "no significant safety concern" and that the final safety merits of the amendment are not to be prejudged in making the determination.

This reading of the amendment is consistent with its underlying policy rationale. If a hearing is underway on whether plant operation under an amendment would be safe, and the Commission itself, without prejudging the ultimate safety conclusion, agrees that significant safety concerns are involved, then it is reasonable to await the conclusion of the hearing before issuing the amendment.

However, the statute and legislative history do not provide clear guidance beyond this general proposition. At least three different versions of a more detailed definition of "no significant hazards consideration" or no significant safety concern appear possible. These are discussed below.

Alternative 1

Under this alternative the focus should be on the outset rather than on the conclusion of the NRC technical review of the proposed amendment. The staff would be called upon to judge whether, based on a preliminary review, the amendment appears to present safety issues which will likely require significant analyses and resources.

This has the advantage of being a very straightforward approach to drawing the required distinction between the safety merits of the amendment, as found after completion of the full safety review, and significant hazards considerations involved in the amendment. However, it has the disadvantage of precluding a no significant hazards consideration finding when the safety

review result is clearly correct as, for example, where the review methodology is indisputable but the required analysis is lengthy.

Alternative 2

Under this alternative, the staff would be called upon to judge whether the safety analysis requires factual findings or choices of methodologies the validity of which could reasonably be disputed by competent experts. If so, then significant safety concerns, and therefore significant hazards considerations are involved. The amount of effort required to reach the safety review conclusions would not be directly relevant.

Under this alternative the distinction between the safety merits of the amendment, as found after completion of the staff review, and significant hazards considerations, is less clear but is nevertheless present.

This alternative has the disadvantage of requiring staff to "second guess" the reasonableness of its own technical conclusions. Of course, this disadvantage can be avoided if the staff approaches the NSHC problem at the outset rather than at the conclusion of its review.

Alternative 3

Alternative 3 would take all of the staff's detailed safety review conclusions as a given, but ask the question whether the additional safety risks posed by the amendment and as found in the review are such that competent experts could disagree as to their acceptability. This alternative clearly requires prejudgment of the facts and review methodology, but does not prejudge the safety review "policy" issue as to the acceptability of any additional safety risks that the amendment may pose. While it avoids or minimizes the cited problems of the other two alternatives, it can reasonably be viewed as inconsistent, at least in important part, with the legal injunction to avoid prejudging the merits. It also is arguably inconsistent with the underlying concept of the statute. It would seem that a decision whether amendment issuance must abide the conclusion of the hearing should relate principally to some judgment about those issues that are most appropriately resolved in the hearing context. Issues as to underlying facts or

review methodology are resolved more appropriately in an adjudicatory hearing context than are risk acceptability policy issues. Thus this alternative seems to focus on the wrong type of issues.

The Regulations

The Commission implemented the no significant hazards consideration statutory provision by issuing 10 CFR 50.92(c), which provides the following substantive criteria for the determination:

The Commission may make a final determination, pursuant to the procedures in § 50.91, that a proposed amendment to an operating license for a facility licensed under § 50.21(b) or § 50.22 or for a testing facility involves no significant hazards considerations, if operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

The Commission's own explanation of the rule included a discussion of how the rule was consistent with the legislative history. 48 FR 14864, 50-SC-89 (April 6, 1983). Thus the regulation must be construed with an eye on consistency with this legislative history. A reasonable way to do this could be to focus on the words "involve" and "create". A proposed amendment which raises no significant technical safety concerns will necessarily also be one that does not "involve" any significant increase in the probability or consequences of an accident previously evaluated, or "create" the possibility of some new or different kind of accident, or "involve" a significant reduction in a margin of safety.

The regulation is most easily read as premised on the third alternative interpretation of the statute discussed above. The regulation appears, on its face, not to call into question the degree of difficulty or effort required in the review, or whether competent experts could disagree as to facts or methodologies. It appears to ask merely whether the amendment poses significant additional risk. However, as discussed above, this interpretation presents the most serious legal problem of the three, since it calls for some prejudgment.

If this way of reading the regulation were the only one possible, then the legal problem could perhaps be overcome, since the legislative history provides the basis for an argument that Congress was aware of the regulation at the time the statute was enacted and did not object to use of the regulation in implementing the new statute. However, the regulation can also be read to be consistent with other alternatives. For example, in connection with the second alternative, an amendment could "involve" a significant increase in the probability or consequences of an accident or significant reduction in a safety margin if, because of factual or methodological disputes, competent experts could disagree whether such results could occur.

It is therefore unclear what interpretation Congress had in mind when it did not object to the regulation. Moreover, the Commission's own discussion of the regulation in the Notice of Rulemaking disavows any intent to prejudge the merits of the final safety review. As noted above, such a disavowal is far more consistent with Alternatives 1 or 2 than with Alternative 3.

While it may be possible to read the regulation in accord with Alternative 1, this interpretation of the regulation strikes us as somewhat strained since there is no indication in the notice of rulemaking that the amount of review effort required is directly relevant to the determination.

Conclusion

The rationale of the recommendation in SECY-83-474 is that no significant hazards consideration is involved because the plant has been returned to as safe a condition as it was prior to the corrosion. This suggests that Alternative 3 has been used to

implement the statute and regulation. However, as discussed above, this reading presents the most severe legal difficulty of the three varying interpretations.

It is not clear to us whether a no significant hazards consideration conclusion could be reached if Alternative 2 were used. Thus, would competent experts disagree whether the cause of the corrosion has been properly identified? Would they disagree whether the testing program was adequate, or whether staff's proposed additional license conditions are sufficient? At least one type of accident, not reviewed in the original TMI-1 FSAR, was reviewed -- multiple steam generator tube ruptures. It would appear, therefore, that the corrosion and repair have created the possibility of some new type of accident never before evaluated. For example, the repair has created the possibility of an accident which could be characterized as "rupture of a tube repaired by kinetic expansion," an accident not previously evaluated.

If Alternative 1 were to be used, it is obvious that significant hazards considerations are involved because of the tremendous review effort that has been required.

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