

Attachment 3

Comparison to R. Christie's Petition for Rulemaking

On November 9, 1999, Mr. Robert Christie of Performance Technology submitted a "request for proposed rulemaking" to the staff on 10 CFR 50.44 ("Standards for Combustible Gas Control System in Light-water-cooled Power Reactors"). As discussed in a January 4, 2000, letter from S. Collins to Mr. Christie, his request has been considered as part of the staff's study of possible risk-informed changes to 10 CFR 50.44. The staff's recommended risk-informed alternative to 10 CFR 50.44 addresses Mr. Christie's request. A comparison of Mr. Christie's request with the staff's recommendation follows:

1. Mr. Christie proposes that the hydrogen source term be based on realistic calculations for accidents with a high probability of causing severe reactor core damage. The staff recommendation is for the hydrogen source term to be based on the more likely severe accident challenges as defined by the framework (i.e., sequences with CDF greater than $10^{-5}/\text{ry}$).
2. Mr. Christie requests elimination of the requirement to monitor hydrogen concentration; the staff also recommends elimination of this requirement.
3. Mr. Christie did not address the requirement of insuring a mixed atmosphere; the staff recommends retaining this requirement.
4. Mr. Christie's petition and the staff's recommendation both include elimination of the requirement to control combustible gas concentration resulting from a postulated-LOCA.
5. Mr. Christie's petition and the staff's recommendation both include retaining the requirement to inert Mark I and II containments.
6. Mr. Christie's petition and the staff's recommendation both include retaining the requirement for high point vents.
7. Mr. Christie proposes, for licensees with Mark III and ice condenser containments, that the hydrogen control system be capable of meeting a specified performance level. This request does not address the potential vulnerability during station blackout conditions in which the hydrogen control system would not be available (i.e., the igniters are ac dependent). The staff recommends that licensees control hydrogen during risk-significant core-melt accidents in such a way that if station blackout is risk significant, hydrogen combustion would be controlled.
8. Mr. Christie proposes that facilities with other types of containments "*must demonstrate that the reactor containment (based on realistic calculations) can withstand, without any hydrogen control system, a hydrogen burn for accidents with a high probability of causing severe core damage.*" The staff believes its recommendation of using risk information and plant-specific analysis to demonstrate containment performance is equivalent to Mr. Christie's proposal.
9. Mr. Christie did not address the concern of combustible gases in the long-term. The staff's recommendation is that long-term control be included as part of the licensee's SAMGs.