Performance Technology

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December 4, 2001

Mr. Anthony W. Markley
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Dear Mr. Markley:

Attached are three specific comments concerning the material on the NRC Web site for draft rule wording for 10CFR50.44 that was noticed in the Federal Register on November 14, 2001. I have other general comments on the rule making but these general comments can be discussed at a later time because they are of a more philosophical nature.

In general, I commend the NRC staff for this work. If implemented, the draft rule wording would result in more effective and efficient regulation with respect to combustible gas in containment. The draft rule wording is consistent with my intent when I wrote to the NRC Commissioners on October 7, 1999 concerning changes to hydrogen control. I recommend that the NRC staff move quickly to implement changes to 10CFR50 along the lines described in the draft rule wording.

Sincerely,

Bob Christie

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Attachment - Letter from Bob Christie to Mr. Anthony W. Markley, Nuclear Regulatory Commission, dated December 4, 2001

Comments on draft rule wording for combustible gas in containment

1. 10CFR50, Appendix A, Criterion 41.

   It appears that the NRC staff intends to retain the existing 10CFR50, Appendix A, Criterion 41, Containment atmosphere cleanup. In my proposed rulemaking that was noticed in the Federal Register on January 12, 2000, I provided wording for a proposed change to Criterion 41. My intent in proposing the change was to focus Criterion 41 on what I consider to be most important. That is: I believe that we want the regulations for combustible gas to focus on the containment capability when a severe accident (severe damage to the reactor core) occurs and fission products are released to the containment. I do not believe that the present wording of Criterion 41 does this. The present wording in Criterion 41 uses the term "postulated accidents" which I no longer believe to be appropriate. I also provided words which brought in the concept of probability to the Criterion.

   Depending on NRC staff interpretation, it may be true that the existing Criterion 41 and the draft rule wording are compatible. The impact of the proposed rule changes may be very close whether Criterion 41 stays as is or is changed as I suggested. However, I believe that we need to move from regulations that address "postulated accidents" to regulations that address public health risk in terms of probability and consequences. I consider this present effort to change 10CFR50.44 as an opportunity to start this move.

2. Draft rule wording (c)(5)(B) - Monitoring for existing plants.

   The NRC staff intends to continue to require hydrogen monitoring in the containment but with commercial grade equipment rather than safety grade equipment and with no technical specifications for such equipment. In my recent efforts on exemption requests for hydrogen monitoring for Three Mile Island and Turkey Point, I have accepted this NRC staff position.

   However, the draft rule wording for hydrogen monitoring uses the term "accident management." As a PRA analyst, I have a pretty good working definition in my mind as to what accident management means and I accept the use of the

commercial grade hydrogen monitors as a backup to other more relevant monitors for severe accidents. However, I am not sure that the use of this term "accident management" in the draft rule wording is appropriate.

I suggest that the wording be changed to the following: "Equipment monitoring hydrogen must be functional and reliable for emergency planning." Requirements for hydrogen monitoring for emergency planning already exists as part of 10CFR, Appendix E, Section VI, Emergency Response Data System. Changing 10CFR50.44 to be consistent with Appendix E would be a more efficient method of regulation. That is: hydrogen monitoring in containment would exist, it would be commercial grade, it could provide backup information to the operators during severe accidents.

3. 10CFR50.46 - High point vents

The NRC staff intends to move the requirements for reactor high point vents to a new section (e) in 10CFR50.46. The wording for reactor high point vents in the proposed 10CFR50.46 (e) is almost exactly the wording in the existing 10CFR50.44. In my proposed rulemaking that was noticed in the Federal Register on January 12, 2000, I provided wording for a proposed rule change for reactor high point vents. I believe my proposed wording is simpler and more efficient. In my opinion, the existing rule includes too many prescriptive requirements that are better left to implementing documents rather than the rule itself. The NRC staff draft rule wording could be improved by deleting some or all of the requirements stated in the draft rule wording.

I would like to point out that the proposed requirement (e)(5), which contains the same words as the existing 10CFR50.44, is perhaps technically impossible. The requirement, "The use of these vents during and following an accident must not aggravate the challenge to the containment or the course of the accident," can not be met. For certain severe accident sequences, the use of these reactor high point vents is intended to reduce the amount of reactor core damage by providing an opportunity to restore reactor core cooling, if possible, to a damaged reactor core before reactor vessel failure. The use of the reactor high point vents will release additional mass and energy to the containment and in a literal sense will "aggravate" the challenge to the containment. The use of the reactor high point vents will result in a short term aggravation to containment but hopefully will be a long term benefit. I suggest that, as a minimum, (e)(5) be eliminated.