United States Nuclear Regulatory Commission
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(Wednesday, May 14, 1997)

NOTE TO EDITORS:

The Nuclear Regulatory Commission has received three reports from its Advisory Committee on Reactor Safeguards. The reports, in the form of letters, provide comments on:

-- Design basis verification.

-- Proposed final policy on the restructuring and economic deregulation of the electric utility industry.

-- Policy regarding stockpiling of potassium iodine.

Copies of the reports are available through the NRC's Office of Public Affairs, the NRC's Internet Homepage and the Public Document Room in Washington, D.C.

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ACRSR-1697

May 7, 1997

The Honorable Shirley Ann Jackson
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Jackson:

SUBJECT: DESIGN BASIS VERIFICATION

During the 441st meeting of the Advisory Committee on Reactor Safeguards, May 1-3, 1997, we met with representatives of the NRC staff and the Nuclear Energy Institute to discuss design basis verification. We reviewed the staff criteria for evaluating licensee responses to the NRC request for design basis information pursuant to 10 CFR 50.54(f), staff initiatives to perform design inspections, and related industry activities and initiatives. We also had the benefit of the documents referenced.

**Conclusions and Recommendations**

- We believe that the current four-phase approach is effective in identifying those licensees that need to take action to maintain their design basis. The staff review of licensee responses appears to have been successful in identifying and prioritizing follow-up inspection activities.

- The design inspections conducted to date have shown that, in some cases, the actual plant configuration and procedures do not correspond to the design basis upon which the plant was licensed. This illustrates the value of the design inspection program and suggests that such a program be continued in some form.

- The NRC will be relying on the results of probabilistic risk assessments (PRAs) to an ever-increasing extent as it embarks on risk-informed, performance-based regulation. PRAs should be based on the current configuration of the plant. Results of the design basis inspections should, then, be shared formally with the Office of Nuclear Regulatory Research and the Office for Analysis and Evaluation of Operational Data. Where inconsistencies between PRA assumptions and design inspection results are found, it may be of use to conduct sensitivity studies to establish the risk significance of these inconsistencies.

Sincerely,

/s/

R. L. Seale
Chairman

References:


1. Section (f) of 10 CFR 50.54, "Conditions of Licenses."
2. Memorandum dated March 19, 1997, from L. J. Callan, Executive Director for Operations, NRC, to the Commissioners, Subject: Update on 10 CFR 50.54(f) Response Review Efforts: Pilot Process Results.
3. Memorandum dated February 25, 1997, from L. J. Callan, Executive Director for Operations, NRC, to the Commissioners, Subject: Review of Licensees' Responses to the 10 CFR 50.54(f) Letter of October 9, 1996, on the Adequacy and Accuracy of Design Bases Information for Nuclear Power Plants.
4. Nuclear Energy Institute, NEI 96-05, draft Revision D, "Guidelines for Assessing Programs for Maintaining the Licensing Basis," dated July 25, 1996.
5. Nuclear Management and Resources Council, Inc., NUMARC 90-12, "Design Basis Program Guidelines," October 1990.

ACRSR-1698

May 8, 1997

Mr. L. Joseph Callan
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Callan:

SUBJECT: PROPOSED FINAL POLICY STATEMENT ON THE RESTRUCTURING AND ECONOMIC DEREGULATION OF THE ELECTRIC UTILITY INDUSTRY

During the 441st meeting of the Advisory Committee on Reactor Safeguards, May 1-3, 1997, we met with representatives of the NRC staff to discuss the draft final version of the NRC Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry. We also had the benefit of the documents referenced.

Conclusions and Recommendations

- The Policy Statement is an important part of the NRC Action Plan on Industry Deregulation and Utility Restructuring and will help to ensure adequate funding for operations and decommissioning of nuclear power plants.

- The issues associated with ownership of a U.S. nuclear power plant by a foreign entity should be reviewed so that the Commission will be better prepared to advise on the need for enabling legislation.

- The language in the Policy Statement pertaining to the assignment of financial liability for decommissioning costs should be clarified.

- The overall Action Plan should give consideration to the following potential safety concerns:

  (1) reductions in manpower and training expenditures that could impact safe plant operations,

  (2) cost-driven changes in plant operations that could significantly reduce safe operating margins,

  (3) inappropriate use of on-line maintenance that could result in a reduction of safety margins, and

  (4) undue erosion of fuel rod integrity margins as burnup increases.

Discussion

As the electric utility industry moves toward deregulation, there may be more premature shutdowns of nuclear power plants as individual utilities seek to minimize costs and reduce financial risk. Recent experience has shown that even some plants with good operating records and in good materiel condition will be permanently shut down if the owners believe that generating costs exceed the projected market price of electricity.

The concerns regarding adequate funding for decommissioning and an erosion of plant safety brought about by the market pressures of reducing operational costs need to be addressed. There is little experience with the decommissioning of nuclear power plants and the costs associated with disposal of spent fuel and low-level waste could have a significant impact on the total decommissioning costs. Cost estimates for decommissioning should be revised as experience is gained. It is encouraging that, as a few States have moved toward some form of retail electric power deregulation, most Public Utility Commissions have recognized that the issue of decommissioning is a matter of public health and safety and have allowed the recovery of decommissioning costs.

The policy of the NRC is to assign financial liability to licensees for decommissioning prorated according to fractional ownership. The NRC does reserve the right to impose "joint and several" financial liability on co-owners of nuclear power plants. In the Policy Statement, the NRC should make it clear that the agency will resort to "joint and several" liability only in an extreme situation where adequate protection of the public health and safety would otherwise not be maintained.

We would like to be kept informed on the resolution of our concerns associated with the NRC Action Plan pertaining to the restructuring and deregulation of the electric utility industry.

Sincerely,

/s/

R. L. Seale
Chairman

References:

1. Memorandum dated April 3, 1997 from T. T. Martin, Office of Nuclear Reactor Regulation, NRC, to J. T. Larkins, ACRS, transmitting Draft Final NRC Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry (Predecisional Draft).

2. Draft memorandum (undated) from L. J. Callan, Executive Director for Operations, NRC, to the Commissioners, Subject: Proposed Rule on Financial Assurance Requirements for Decommissioning Nuclear Power Reactors.

3. Office of Nuclear Reactor Regulation, Excerpt from Director's Bimonthly Status Report, March 1997, on Industry Deregulation and Utility Restructuring Action Plan (NRC Internal Document).

4. Public Comments Received on draft Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry, undated.

ACRSR-1699

May 9, 1997

The Honorable Shirley Ann Jackson
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Jackson:

SUBJECT: THE POLICY REGARDING STOCKPILING OF POTASSIUM IODIDE

During the 441st meeting of the Advisory Committee on Reactor Safeguards, May 1-3, 1997, we completed our discussion of the bases for the NRC staff's denial of a petition for rulemaking relating to the reevaluation of the policy regarding the use of potassium iodide (KI) after a severe accident at a nuclear power plant. During our 440th meeting, April 3-4, 1997, we discussed this matter with representatives of the NRC staff, the Nuclear Energy Institute (NEI), and the State of Illinois. We also had the benefit of the documents referenced.

Mr. Peter Crane, a member of the NRC staff in the Office of the General Counsel, had previously filed a differing professional opinion in 1989 requesting a reevaluation of the Commission's policy on KI. Mr. Crane also filed a petition on September 9, 1995, as a private citizen requesting a rulemaking to implement the recommendations of the Kemeny Commission that the United States stockpile KI for protection of the thyroid following nuclear accidents. Specifically, Mr. Crane requested that the Commission amend its regulations (10 CFR 50.47(b)(10)) to specify that the prophylactic use of KI for the general population within the plume exposure pathway Emergency Planning Zone (EPZ) for each licensed nuclear power plant be identified as one of the "range of protective actions" required to be set forth in State and local emergency plans.

There is no argument that KI can act as an effective radioiodine blocker if administered in a timely manner. But in the supporting documentation and presentations, the staff did not adequately address several technical concerns that have been expressed repeatedly when this issue has arisen in the past. These include the spectrum of side effects that would be encountered in the administration of KI to a large population or the identification of the timing of KI administration to ensure effective blocking of radioiodine released during nuclear accidents. We saw no meaningful study of KI predistribution, nor did we see any examination of limited KI shelf life.

Conclusion

We find the arguments for the stockpiling of KI to be unconvincing. Therefore, we agree with the staff's position that a revision to the regulations is unwarranted and that the petition should be denied.

Discussion

In 1996, the Federal Radiological Preparedness Coordinating Committee (FRPCC) had convened an ad hoc Subcommittee on Potassium Iodide to review the public use of KI following a nuclear accident. Based on its evaluation of new information and comments from interested parties, the FRPCC Subcommittee concluded that "while the viewpoints presented at the public meeting were compelling, the 1996 Subcommittee heard no new information that seriously challenges the bases for the 1985 recommendation concerning public use of KI." The 1985 policy did not recommend predistribution or stockpiling of KI for the general public. Nonetheless, the FRPCC Subcommittee made several recommendations including the following:

- Without changing the Federal policy, and without interceding in the State's prerogative to make its own decision on whether or not to use KI, the Federal Government (NRC, or through FEMA, etc.) should fund the purchase of a KI stockpile for any State that, hereafter, decides to incorporate its use as a protective measure for the general public.

- Local jurisdictions, who have the option of incorporating the use of KI in their protective measures independent of the State's plan, consider, in consultation with the State, the use of KI as a possible protective measure, and be aware that if they choose to do so, they would then incur a responsibility to develop plans for distribution or predistribution of the KI.

The full FRPCC endorsed the Subcommittee's recommendations and plans to publish a revised Federal policy statement on the distribution of KI. The staff's position is that a revision to the

regulations as requested by the petitioner is unnecessary because the anticipated actions by the FRPCC will address substantially the fundamental concerns of the petitioner without incurring the burden of changing all State and local emergency plans. The actions expected to be recommended by the FRPCC will ensure that, in contrast to the inadequate supply situation which existed at the time of the Three Mile Island accident, KI could be made available if needed.

Representatives of NEI and the State of Illinois concurred with the staff's recommendation that the petition be denied and that the State and local governments be allowed to decide when to include KI for general public use in emergency plans. They argued that stockpiling or predistributing KI for the general public will not add any significant public health and safety benefit beyond that provided by existing emergency preparedness at commercial nuclear power plants.

Additional comments by ACRS Member Dr. T. S. Kress are presented below.

Sincerely,

/s/

R. L. Seale
Chairman

Additional Comments by ACRS Member Dr. T. S. Kress

I disagree with the Committee's position on this issue. It has been recognized for more than 40 years that KI would be an effective prophylaxis against fission-product-iodine-induced thyroid cancer if taken on a timely basis before exposure. In the face of this almost universally agreed upon knowledge, the long-standing policy of NRC of leaving the decision up to the States as to whether or not to stockpile KI has resulted in only two States adopting the strategy. It is obvious that the desired result of having this remedy available if needed has not been achieved by this policy and most likely never will be.

The major difficulties with KI stockpiling are "limited shelf life" and "difficulty of distribution" (or whether or not to pre-distribute). The issue of limited shelf life essentially has been resolved by new encapsulation technology. The distribution issue just needs a real resolve on the part of NRC to address it. There are a number of workable solutions. The oft-cited failed initial attempt in Tennessee to predistribute should not be taken as an absolute indicator of the potential for that strategy. There have

been no follow-up investigations as to why this attempt failed and how to make it work.

The federally controlled stockpiling of KI cannot and should not be justified on risk reduction or cost/benefit considerations. It should be viewed as being strictly defense-in-depth (as are other emergency response measures) and is justified purely on prudency grounds. NRC should actively work with the States to set up an effective system stockpiling and distributing KI.

References:

1. Memorandum dated March 26, 1997, from Peter Crane for the ACRS, transmitting Rulemaking Petition dated September 1995 on Potassium Iodide.
2. Memorandum dated February 13, 1997, from Bill M. Morris, Office of Nuclear Regulatory Research, NRC, to John T. Larkins, ACRS, Subject: ACRS Review of the Denial of Petition for Rulemaking (PRM-50-63) Relating to a Re-Evaluation of the Policy Regarding Use of Potassium Iodide after a Severe Accident at a Nuclear Power Plant.