



OFFICE OF THE
COMMISSIONER

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

April 14, 1989

MEMORANDUM FOR: Victor Stello, Jr.
Executive Director for Operations

FROM: Kenneth C. Rogers

SUBJECT: LETTER FROM MIT RESEARCH REACTOR

Attached is a letter I received during a recent visit to MIT. I would like staff's views on the concerns raised in this letter. I am particularly interested in the issues which have generic significance.

Kenneth C. Rogers
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Commissioner

cc: Chairman Zech
Commissioner Roberts
Commissioner Carr
Commissioner Curtiss

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POTENTIAL POSITIVE NRC ACTIVITIES CONCERNING UNIVERSITY RESEARCH REACTORS

The activities listed below are examples of regulatory and/or administrative actions that would both further reactor safety and facilitate the operation of university research reactors:

1. Procurement of Clean D₂O: In September 1988 the Department of Defense imposed a ban on the shipment of D₂O to non-DOD facilities. The MIT Reactor needs to replace its D₂O reflector because tritium levels in the D₂O are making required maintenance very difficult. Also, all preventive maintenance is being deferred. DOE is making arrangements to procure clean D₂O from Canada in exchange for our contaminated D₂O. Anything that NRC could do to assist DOE in this process (simplify shipping regulations, for example) would be of benefit. The longer the delay, the greater the likelihood of a radiological release.
2. Central Plutonium Collection Facility: Many universities have small (milligram) quantities of plutonium left from research performed decades ago. The universities must spend money inventorying and safeguarding it. NRC must spend money inspecting it. None of this is logical because the plutonium serves no function. At MIT, we have been trying unsuccessfully to dispose of milligram quantities for years. The establishment of a central collection site, perhaps one of the DOE facilities, would save NRC and universities significant expense without, we believe, adding much to DOE costs.
3. Shipment of Spent Fuel: The United States and IAEA have expressed much concern about weapons proliferation. One means of enhancing nonproliferation would be to simplify the process for returning spent fuel to DOE-owned reprocessing centers. Yet, our society as a whole is making this extraordinarily difficult. In particular,
 - (a) State and local governments issue restrictive regulations that make the shipment of spent fuel needlessly difficult and therefore less safe.
 - (b) NRC refuses to license casks for the shipment of spent fuel.

Regulatory relief in this area would result in less fuel being present in the cycle at any given time. [NOTE: We believe that this problem is even worse in Europe and that particular attention should be given to facilitating the return of U.S. fuel sent abroad.]
4. NRC Regionalization: Overall, the decision to establish regional offices has been of benefit. However, conflicts sometimes arise between NRC Headquarters in Washington and the Region. On three occasions, MIT has been told by the Region that a provision in our emergency or security plans was invalid even though NRC Headquarters had approved it. We spend many man-months and, in the case of the emergency plan, more than a man-year, on these plans. Once approved by Headquarters, we feel that the provisions in those plans should be accepted by the Region. (NOTE: The problems arise when the plan contains an exemption from a particular regulation.)
5. Regulation of Research Reactors as Power Reactors: Research reactors have a much smaller source term than do power reactors. Also, the performance of research requires

flexibility. Yet too often research reactors are being judged by power reactor standards. Actions that would be of benefit include:

- (a) Assign inspectors to research reactors who are familiar with research reactors. Power plant inspectors should not be arbitrarily assigned a research reactor as an "add-on" responsibility.
 - (b) Make licensing exams more readily available. Currently NRC budgets only allow one exam per year. (NOTE: Region One has been helpful to us in getting more than one when absolutely necessary. But, that is not the same as knowing that you could have two exam dates per year.)
 - (c) Limit corrective action to the facilities that warrant it. For example, we understand that one facility unduly restricted access by NRC inspectors. As a result, NRC has now obtained keys to that facility and may be considering doing the same at other facilities. MIT has never restricted access to inspectors. We feel quite strongly that security would be decreased if operators and police knew that a total stranger might legitimately have direct access.
 - (d) Region One is desirous of establishing monthly phone calls to better inform itself of activities at MIT. We have agreed to try this. If the phone calls are for information exchange, they will be useful and perhaps even a very positive development. But we are concerned that these calls may ultimately add a layer of regulation.
 - (e) Complementing the Region's desire to become more knowledgeable of university reactors, we'd like to know more about the organization of the Region and also of the Headquarters. Providing each facility with an NRC phone book once a year would be of assistance. Also, more frequent distribution of organization charts would help.
 - (f) NRC's decision to issue printed license certificates to operators was a big morale booster. How about issuing a new certificate whenever a license is renewed?
6. NRC Knowledge of University Research: One of the difficulties in implementing new concepts on power plants is that regulatory authorities are often unfamiliar with the concept and therefore unwilling to approve it. For example, this is true of most recent progress in reactor control. NRC could benefit by having its inspectors become cognizant of new concepts as they are developed. For example, MIT has generic supervisory algorithms, predictive laws, and rule-based controllers. We'd be delighted to discuss these with anyone who expresses interest. Perhaps the telephone exchange (item 5(d) above) will lead to this. (At present, all that gets discussed during on-site inspections is 10 CFR 50.59 compliance.)
7. Over-regulation: The Document Control Desk is requiring copyright releases on published papers submitted as part of safety evaluations. The release is required even on papers written by government employees. But, by law, these can't be copyrighted because the work was performed with federal tax dollars. The net result is a needless delay in processing the safety evaluation.

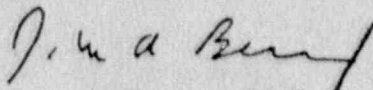
Another example is the NRC decision to have NRC examiners re-examine the operators of University Reactors every six years. We have operated for decades by administering our own requalification exams. Why regulate a problem that doesn't exist? (NOTE:

We understand that NRC may be reversing this decision. If so, it is a positive development.)

The above are some suggestions for improving both safety and ease of operation. Please recognize that we do appreciate the dedication of the Staff of both Region One and NRC Headquarters. NRC personnel are far more professional than those of some other agencies with which we've dealt. However, also please recognize that University reactors are underfunded and that our staffs have a wide variety of responsibilities. New regulations, particularly unwarranted ones, can cause major perturbations that will decrease safety by taking the time of the most senior people. Also, in some areas such as cask licensing, the net effect of NRC regulations is to lessen the safety of the overall fuel cycle by needlessly prolonging the time that spent fuel is kept on-site.

We suggest that NRC fund research on the impact of new regulations: determine what existed, what changes were actually implemented (as opposed to merely occurring on paper), and at what cost. Also, was the impact on the overall safety of the facility or process in question positive?

Sincerely,



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