

JOINT NUMBER PR-50
PROPOSED RULE (49 FR 27769) (144)

SOUTHERN CALIFORNIA FEDERATION OF SCIENTISTS

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USNRC

June 10, 1985

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Chairman Nunzio Palladino
Commissioner Thomas Roberts
Commissioner Fred Bernthal
Commissioner James Asselstine
Commissioner Lando Zech
U.S. Nuclear Regulatory Commission

U.S. SEC. OF
ENERGY
REGULATORY
BRANCH

Ref: Limiting the Use of Highly Enriched Uranium in Domestic
Research and Test Reactors

Dear Commissioners:

I am an engineer by profession, and Co-Chairperson of the Southern California Federation of Scientists (SCFS), a thirty-five year old organization of scientists and engineers. SCFS has, for the last five years, been deeply involved in issues regarding safety and safeguards at research reactors.

We strongly support the proposed NRC rule to require such reactors to convert to the use of non-weapons-grade nuclear fuels. Should the rule be reversed, two serious consequences could result: major obstacles to achieving the U.S. foreign policy goal of converting foreign reactors and thus reducing commerce in weapons-usable materials, and the potential for theft and possible detonation of Highly Enriched Uranium (HEU) that would remain at these domestic sites. Neither consequence is acceptable.

Highly Enriched Uranium as found at some of these research reactors is extremely dangerous in that it can be used directly to fashion a nuclear explosive. The separation of the HEU from the fuel is an elementary matter, and the fuel at most of these low-power reactors is either unirradiated fuel in storage or so lightly irradiated that there is little if any deterrent to its theft. Because many of these reactors are located on university campuses, with the open atmosphere which is such a fundamental aspect of academic life, security is not, and cannot be, anywhere near sufficient to protect weapons-grade material from potential terrorist acquisition.

The proposal to have DOE retrieve the HEU it loaned these institutions and replace it with Low Enriched Uranium (LEU) of little or no proliferation danger if stolen is sensible, admirable, and necessary. The reactors can continue their research, but

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the nation's security will have been inestimably enhanced. With Congressional funding of the replacement LEU fuel, transportation, and related expenditures, there should be no adverse impact on these reactors whatsoever. In fact, there would be much advantage: reduced risk of terrorist attack, reduced need for expensive and obtrusive security measures, and reduced public concern.

We understand that a few research reactor operators have expressed concern about the conversion proposal, particularly that unique research which requires HEU would be lost if conversion to LEU were required, and that public opposition and legal interventions might occur if license amendments for such conversion were needed. Both concerns seem to be misplaced.

First of all, we understand that the NRC's proposed rule provides a "unique purpose" exemption so that any reactor which could not perform its unique research with LEU would not be required to convert to LEU. The vast majority of reactors could convert without noticing any difference; those very few which might be adversely affected are to be exempted. There is no issue here.

Secondly, as to the concern that there might be public opposition and legal action taken in response to conversion license amendments, it would appear that this concern is turned upside down. There have been interventions-- we even assisted in providing technical assistance to one of them-- in reactors with HEU. There, responsible citizens were concerned, correctly we believe, that the security in place was grossly inadequate to protect weapons-grade material from theft or diversion. Interveners were pushing for conversion to LEU; had that occurred, many of the issues contested would have been resolved.

It is the presence of HEU which has led to interventions. It is removal of HEU that will protect these institutions against interventions. No group has ever opposed conversion to non-explosive fuel; several have opposed refusals to convert, however. Thus, if institutions wish to ensure public opposition and legal battles, defeat of the NRC rule is the best guarantee. If they wish to avoid these troubles, conversion is the best remedy.

We should also point out that the choice is really conversion or vastly increased security. The latter would be far more expensive, would not be paid for by Congress as will be replacement of the DOE fuels, and would substantially alter the academic environment of the affected sites. Failure to convert thus is likely to lead to closure of a number of reactors whose institutions cannot afford the very expensive task of seriously upgrading security to adequately

protect weapons-grade materials, or whose Engineering Deans do not want the trouble involved with creating a high-security area with all the attendant problems in the midst of an open campus.

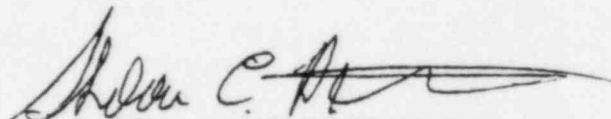
We have no intention of assisting any group in opposing conversion to LEU. We would, however, give serious consideration to a request for technical assistance in an NRC proceeding were the conversion rule overturned and HEU remained at research reactors. If reactor operators wish to avoid the problems UCLA was faced with, conversion would help; refusal to convert would increase, not decrease, the likelihood of public outcry and legal challenge. It is the presence of weapons-grade material that is causing so much of the public concern about these reactors in the first place.

It is instructive to remember that UCLA removed its application for license renewal one week before security hearings were to open in that proceeding, assessing the adequacy of security at the site in light of the very sensitive material possessed. UCLA could not meet its burden in demonstrating adequate security, and it withdrew its application. Had it converted to LEU, all of its difficult security problems would have vanished.

In conclusion, conversion is in the interests of reactor operators. Without conversion, they face continued and growing public opposition, vastly increased security requirements, and the prospect that a number of such facilities will shut down because they can't afford the additional security or because of the public concern generated by the presence of weapons-grade materials in underdefended locations. Without conversion domestically, our initiative to convert foreign reactors and reduce international commerce in HEU is doomed to failure. And perhaps most importantly, without conversion, we face the unacceptable risk that someday some group will steal weapons materials from these reactors, fabricate an atomic weapon, and threaten to, or actually proceed to explode such a destructive device, with the extraordinary results to international order that would flow therefrom, not to speak of the immense human suffering caused.

The NRC proposal to replace the HEU at these reactors with non-weapons-grade materials is a cheap, prudent, and very sensible proposal, one which merits renewed Commission affirmation.

Sincerely,



Sheldon C. Plotkin, Ph.D.
Co-Chairperson