

March 13, 1984

The Honorable Victor Gilinsky
Commissioner
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Vic:

I did very much appreciate receiving your recent letter recommending a "set-aside" of \$1.5 million in the Nuclear Regulatory Commission budget for the purpose of converting university reactors from highly-enriched uranium to low-enriched uranium.

We have not included the funding for such an initiative in the NRC's budget for fiscal years 1984 and 1985 -- but I do feel that your recommendation deserves very careful consideration by the NRC, the Department of Energy and the Congress.

Once again, I very much appreciate your bringing this matter to my attention and look forward to hearing whatever views your fellow Commissioners, as well as the DOE, might have on this subject.

Most sincerely,

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Alan K. Simpson
United States Senator

AKS/jct

cc: Chairman Palladino
Commissioner Roberts
Commissioner Asselstine
Commissioner Bernthal
The Honorable Donald Paul Hodel

3/21..To OCA for Appropriate Action..Cpys to: Cmrs...84-0329

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

OFFICE OF THE
SECRETARY

February 23, 1984

MEMORANDUM FOR: William J. Dircks
Executive Director for Operations

FROM: Samuel J. Chilk
Secretary for the Commission

SUBJECT: DEVELOPMENT OF A PROPOSED RULE ON THE USE OF HEU AND
STEPS TO IMPROVE SECURITY MEASURES

The Commission was briefed on current physical security measures at domestic nonpower reactors and on the potential for conversion of these reactors from high enriched uranium to low enriched uranium fuel in meetings held on December 19, 1983, January 27 and February 6, 1984. As a result of these briefings the Commission requests that the staff prepare expeditiously (by March 30, 1984) for Commission consideration a proposed rule on the use of HEU, and a plan and schedule for development of steps to improve security measures at domestic nonpower reactors using HEU fuel.

A. Proposed Rule on HEU at Domestic Research Reactors

The proposed rule should contain the following provisions:

1. No new nonpower reactors would be licensed for use of HEU fuel unless the applicant shows the unique purposes of the project cannot be achieved without using HEU fuel.
2. Existing nonpower reactors would be required to convert to LEU fuel if it is technically feasible for them to do so.

Reactors that refuel would be required to replace such fuel with low enrichment fuel as the replacement fuel becomes available. The schedule of such replacements would be developed by the Director, NRR, who will coordinate such actions with DOE. If a suitable replacement fuel is not expected to be available within the overall schedule of DOE's RERTR program, the rule should provide for replacement of HEU fuel with fuel of enrichment as close to 20 percent as practical.

For reactors that would not otherwise expect to require the acquisition of new fuel during the term of their license, a schedule should be developed by the Director, NRR, to provide for as prompt conversion to LEU as is reasonable.

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- . Schedules for conversion should take into account such factors as: scheduling of shipping casks, replacement fuel fabrication, financial support, and reactor usage. These schedules should be coordinated with DOE.
- 3. Exemptions from this rule would be based on a determination that the particular reactor serves a unique purpose. Unique purpose should account for such characteristics as neutron flux levels and energy spectrum specifically designed to facilitate research on irradiations not performed elsewhere in the U.S. The Director, NRR would determine whether a reactor has a unique purpose. Commissioner Gilinsky would prefer that the Commission itself make this determination.
- 4. In order to minimize costs to licensees of obtaining permission to use low enriched uranium, consideration will be given to including in the rule provisions which would permit existing licensees automatically to convert their facilities to LEU if prescribed conditions are met. These conditions should assure that present safety margins are not significantly reduced. To this end the staff should act promptly to develop the technical basis needed to support generic findings which would permit conversion to LEU.
- 5. The rulemaking should request comments on the question of how much the issue of economic feasibility should influence the conversion of facilities to LEU.
- 6. This rulemaking is based upon Congress funding DOE to provide the appreciably lower enrichment and LEU fuel for university reactors.

B. Proposed Steps to Improve Physical Protection at Domestic Research Reactors

The proposed steps should consider, for the period preceding the completion of conversion to LEU fuel, alternative strengthened security measures at licensed NPRs, including any available estimates of the benefits and impacts of the following possible improvements:

1. Augmented Minimal Protection for Both Category I and II Facilities
 - . Reduce holdings of fresh HEU fuel at nonpower reactors
 - . Provide tamper-proof detection systems and line-supervision
 - . Assure presence of two-persons during access to material

- . Improve communications capability
- . Provide access barriers over the reactor core.

2. Additional Protection for Category I Facilities

- . Require submittal for NRC review and approval of the specific measures that the licensee would apply to meet the requirements of 10 CFR §73.60; and
- . Require licensees who, under the 100 rem/hour at 3 feet exemption, meet only Category II requirements to demonstrate how they determine that radiation levels are maintained above the level stipulated in the exemption; and
- . Require licensees to notify the NRC at least 48 hours before they expect a change in requirement category.

3. Transportation

The staff should recommend options for strengthening present Category II HEU transportation safeguards requirements for consistency with upgraded protection at nonpower reactors.

The staff should report back to the Commission by March 30, 1984 with recommendations on (1) which of the above improvements or others should be implemented, (2) when they should be in place, and (3) the method of implementing them (e.g., license condition, rulemaking). The goal should be assurance that upgrades needed to strengthen security will be put in place expeditiously, but with due consideration given to relevant safety considerations.

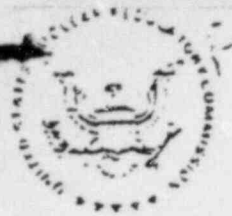
Work on the final rule for theft at Category I nonpower reactors (the permanent rule replacement to 10 CFR §73.60) shall be deferred, but should include a reexamination of the technical basis for the present irradiation exemption and whether irradiation provides a sufficiently effective inherent safeguards protection for formula quantities of SNM to justify the significantly lower level of physical protection associated with Category II.

C. Implementation

In developing the proposed rule and steps (A and B above) the staff should provide answers to the following questions: (1) whether the conversion to LEU fuel can be done strictly by rule, without license amendments, or whether license amendments will be required; (2) if license amendments are required, whether and under what circumstances

hearings would need to be held on those amendments; and (3) whether a negative declaration, environmental assessment, or environmental impact statement is required for either the rule or, if required, the license amendments.

cc: H. Plaine
J. Zerbe
C. Kammerer



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

June 7, 1984

MEMORANDUM FOR: Chairman Palladino
Commissioner Gilinsky
Commissioner Roberts
Commissioner Asselstine
Commissioner Bernthal

FROM: William J. Dircks
Executive Director for Operations

SUBJECT: INSPECTION OF THE SELF PROTECTING EXEMPTION

During the Commission Briefing on May 31, 1984, concerning the staff's plans for increasing security measures at nonpower reactors (NPR) that use high enriched uranium fuel, staff was requested to provide information on how licensees determine self protecting exemptions under 10 CFR 73 and how IE reviews those determinations.

William J. Dircks
Executive Director
for Operations

cc: OPE
OGC
SECY

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