



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

February 8, 1984

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

FROM: *John E. Zerbe*  
John E. Zerbe, Director  
Office of Policy Evaluation

SUBJECT: PROPOSED DRAFT REQUIREMENTS MEMORANDUM TO STAFF REGARDING  
NON-POWER REACTORS

Enclosed, as you requested, is a proposed staff requirements memorandum regarding the conversion of existing non-power reactors to the use of low enriched uranium and the upgrading of physical security at these facilities. This proposed staff action plan would identify options for handling rulemaking and should show the schedule for rulemaking. The draft SRM contains elements of a proposed rule on use of HEU at domestic research reactors for Commission consideration and actions to upgrade physical protection which were discussed at the Commission meeting.

Enclosure:  
As stated

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UNITED STATES  
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MEMORANDUM FOR: William J. Dircks  
Exexutive Director for Operations

FROM: Samuel J. Chilk  
Secretary for the Commission

SUBJECT: DEVELOPMENT OF PROPOSED RULES ON THE USE OF HEU  
AND INTERIM SECURITY MEASURES AT DOMESTIC NON-POWER  
REACTORS

The Commission was briefed on current physical security measures at domestic non-power 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 promptly prepare for Commission consideration a plan and schedule for development of two separate rules.

Proposed Rule on HEU at Domestic Research Reactors

The proposed rule should contain the following provisions:

1. No new non-power 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 non-power 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% 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.
  - ° 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 of 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 the costs to licensees of obtaining permission to use low enriched uranium, consideration should 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.