



Department of Energy  
Washington, D.C. 20585

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Michael S. Kearney  
Integration Section Leader  
Policy and Program Control Branch  
Nuclear Regulatory Commission  
Washington, D. C. 20555

WM Record File

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WM Project 1

Docket No. \_\_\_\_\_

PDR

LPDR

Distribution:

M. Kearney

J. Gorn

J. O. Bunting

(Return to WM, 628-SS)

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Dear Mr. Kearney:

Enclosed is a copy of the Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM) response to the General Accounting Office (GAO) report regarding extended nuclear fuel burnup, as requested by Mr. Joseph O. Bunting, Jr. in his February 22, 1984, letter addressed to me.

If you have questions concerning the GAO report or the OCRWM program, please feel free to contact me, or Charles R. Head, Acting Director of my Operations Division. He may be reached on 252-5722.

Sincerely,

Robert M. Rosselli  
Acting Associate Director  
for Management  
Office of Civilian Radioactive  
Waste Management

Enclosure:  
Comments on GAO Report RCED-84-111

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## DOE Comments on GAO Report

"DOE Needs To Evaluate Fully The Waste Management Effects Of Extending The Useful Life Of Nuclear Fuel"

GAO/RCED-84-111

Following are: (1) the General Accounting Office (GAO) recommendations for action by the Secretary of Energy; and (2) the Department of Energy (DOE) comments pertaining to each recommendation.

### 1. GAO Recommendation

"We recommend that the Secretary of Energy complete a full evaluation of the potential to extend fuel burnup and the effects on DOE efforts to subsequently manage the higher burnup fuel.

-- DOE should consider the merits of continued government funding of the DOE extended fuel burnup program in terms of (1) the potential budgetary costs, (2) the potential benefits and beneficiaries, and (3) the likelihood that the nuclear industry would continue extending fuel burnup."

### DOE Comment

DOE has considered the potential of continuing the Extended Burnup Program located within the Office of the Assistant Secretary for Nuclear Energy as part of its formulation of the FY 1985 budget request. A decision was made not to request funds for this program in FY 1985. This decision was in accordance with the Administration's policy to provide support for research and development efforts only if they are

long-range, high risk efforts far removed from commercialization. The commercialization of the extended burnup technology developed under the program to date has already begun.

In addition, the Office of Civilian Radioactive Waste Management (OCRWM) and the Office of the Assistant Secretary for Nuclear Energy (NE) will conduct the following studies in response to a recent request from Representative Ottinger.

- (1) OCRWM will conduct a comprehensive study of the costs and benefits of extended burnup to the Civilian Radioactive Waste Management Program, and
- (2) NE will conduct a study of the incentives relative to extended burnup existing within the private sector and of possible future actions to enhance such incentives if necessary, and a study of the costs and benefits of extended burnup to the "front end" of the nuclear fuel cycle.

The OCRWM and NE cost/benefit studies will be coordinated to ensure that combination of their results will accurately reflect the total costs and benefits of extended burnup to the entire nuclear fuel cycle. The results will be combined and explained in the correspondence that transmits the study results to Congress. These studies are responsive to both the GAO recommendation and Representative Ottinger's request and should, upon completion, provide the factual basis for a possible reconsideration of the merits of continued Federal government funding of the Extended Burnup Program.

The study of the incentives relative to adoption of extended burnup is expected to be completed by mid-June 1984. The study of the costs and benefits of extended burnup to the Civilian Radioactive Waste Management Program has not yet been started and as a result no date for completion has been

established at this time. The date for completion of the study will be established by the end of April 1984. Due to the interaction of this study with the annual OCRWM fee adequacy analysis required by Public Law 97-425, the results of this cost/benefit study are not expected to be available before the end of fiscal year 1984. The NE cost/benefit study is being timed to be finished at the same time as the OCRWM cost/benefit study.

2. GAO Recommendation

" -- DOE should quantify, to the extent possible, the effect of increases in fuel burnup on its spent fuel acceptance schedule, and clearly identify the potential impact on its requirements for providing the necessary facilities and services to carry out the Nuclear Waste Policy Act."

DOE Comment

DOE concurs with this recommendation. In the summer of 1983, OCRWM requested the Energy Information Administration (EIA) to evaluate the impact of extended burnup on spent fuel discharge projections.

In response, EIA is analyzing several, independent sources of information, including the following:

- (1) Utility commitments for purchase of uranium enrichment services from the U.S. Government as an indication of their plans to utilize higher burnup and thus, more highly enriched nuclear fuel;

- (2) Utility orders for fuel assemblies with higher uranium enrichment;
- (3) Utility plans and projections for future burnup extension; and
- (4) Similar independent projections by technical experts involved in burnup extension research, development, licensing, and implementation.

The results of these studies are expected by late Summer 1984. These results will provide part of the data needed in the study of the costs and benefits of extended burnup on the Civilian Radioactive Waste Management program.

### 3. GAO Recommendation

"Furthermore, the Secretary should report the results of this evaluation to cognizant congressional committees (1) for their consideration of DOE's Mission Plan for carrying out the Nuclear Waste Policy Act and (2) as another factor for their fiscal year 1985 budget deliberations on whether to continue funding for DOE's Extended Burnup Program."

### DOE Comment

As noted in the preceding DOE comments, the results of the study of the incentives for adoption of extended burnup and the quantification of the effect of extended burnup on the OCRWM waste acceptance schedule are not expected to be available until late Summer 1984. Thus they will not be available for incorporation into the OCRWM Mission Plan. However, these results should be available for the latter stages of the FY 1985 budget deliberation cycle. The date by

which the results of the study of the costs and benefits of widespread use of extended burnup on the OCRWM program will be available is not known at this time. DOE will notify Congress of the date by which the results of this study are expected to be available by May 7, 1984.

The results of all of the recommended evaluations will be submitted to the congressional committees that receive the DOE comments pertaining to GAO report GAO/RCED-84-111.

DOE Comment Not Related to a GAO Recommendation

On Page 9 of the letter, the following statement is made:

"The Office of Civilian Radioactive Waste Management has arranged for the EIA to develop scenarios of utility implementation of extended burnup and its effects in reducing the generation rate of spent fuel over more than a 4-decade period (1984 to 2026). This task will require EIA to modify the econometric model it uses to project spent fuel generation."

The EIA will develop the requested scenarios; however, to date, they have been asked to generate these only through the year 2020, not 2026. It should also be clarified that EIA uses an economic model (World Integrated Nuclear Evaluation System) to develop electricity generation forecasts to the year 2020. The results of this model are then used by another model which develops the spent fuel forecasts. Only the latter, non-economic model requires modification to incorporate extended burnup.