Gesmo File

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

SEP 15 1980

MEMORANDUM FOR: John G. Davis, Deputy Director
Office of Nuclear Material Safety and Safeguards

FROM: Richard E. Cunningham, Director
Division of Fuel Cycle and Material Safety

SUBJECT: GESMO RESOURCE REQUIREMENTS

My August 28 memorandum to you concerning "Information on GESMO Status" included a summary of the resources applied in the original GESMO proceeding. An earlier memorandum of August 5 dealt with "Estimated Resource Requirements for Completing the GESMO Proceeding." Further information on these estimates is given below.

The estimate of resources applied in the original GESMO effort covered only the technical staff assigned to the GESMO project. While the records of time charged to the GESMO effort in 1974 through 1977 are not readily available, we have estimated the supporting staff effort for the original study on the same basis as the estimate of resource requirements for completing the GESMO proceeding in the future. The estimates are summarized below.

		Original GESMO Project (1974-1977)	New GESMO LWR Only (3 years)	New GESMO w/Breeder (3 years)
Scientific and Technical Staff (man years)		34	71	90
Support (man years) (estimated--data not available for original GESMO support groups)	ELD	6	9	9
	OPE	2	3	3
	SECY	2	2	2
	IP	0	3	3
	RES	0	0	12
	ADM-Security	6	8	8
	-Word Proc.	6	18	18
	FC non-technical	12	12	12
Total GESMO (man years)		68	126	157
Contractual Support		$2,700,000	$5,830,000	$49,180,000

The principal differences in estimates for the original GESMO project and estimates of resource requirements to complete the proceeding are the following:

- Greater staff effort on waste management (+10 man years). This work was performed by ORNL under contract for the first GESMO, but is assumed to be done by the Waste Management staff with contractual support if the project is reopened. The effect of proposed new waste management regulations would require a more detailed analysis.

- For the original GESMO, the data from the Barnwell Nuclear Fuel Plant (which was new at that time) were used with a minimum of staff analysis. In a new GESMO study, it is assumed that changes to achieve non-proliferation objectives will require modification of the reprocessing plant design and this will necessitate more detailed analysis of the environmental impacts (+7 man years).

- For the original study DOE provided the nuclear power growth projections and assisted with the analyses of material flows in the fuel cycle for the various reprocessing and recycle alternatives. It is assumed that the staff would perform these analyses in future studies (+6 man years).

- Safeguards requirements to perform a complete environmental impact analysis would be greater than for the limited study performed the first time, especially considering the effects of the upgraded safeguards regulations (+11 man years).

- Support groups, which often were forced to work overtime in the original GESMO project, estimated higher staff requirements for a new GESMO proceeding (+20 man years). Some who were not involved originally plan to assign personnel to support a new proceeding (Research, International Programs).

- Contractual support is estimated at higher levels, especially in Safeguards (+$750,000) and Waste Management (+$650,000), where the effects of new regulations must be analyzed, and in Administration, where the magnitude of the word processing and printing requirements are better known now than they were for the original GESMO project. The estimate of contractual support for the original GESMO did not include administrative support contracts, which for the new proceeding were estimated at $1,900,000.

If GESMO is to include consideration of the breeder, which we recommend, all technical groups would require greater staff effort to analyze the more complex fuel cycles involved in a breeder economy (+19 man years). In addition, a major increase would be required for research on matters related to breeder fuel cycle regulations concerning new aspects of health, safety and safeguards requirements (+12 man years, + $42,000,000).

Richard E. Cunningham, Director
Division of Fuel Cycle and
Material Safety

cc: R. S. Brown, Jr.

AUG 8 1980

MEMORANDUM FOR: Carlton C. Kammerer, Director
Office of Congressional Affairs

FROM: John G. Davis, Deputy Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: POSSIBLE REINSTITUTION OF GESMO HEARINGS

The July 14, 1980 letter to Chairman Ahearne from Stuart E. Eizenstat, Assistant to the President for Domestic Affairs and Policy, reiterated the Administration's view that reprocessing of commercial reactor fuel should be deferred indefinitely and that the GESMO proceeding should remain terminated. If the Congress should mandate a reinstitution of the GESMO hearing, we would urge that first the 1976 GESMO study and report be thoroughly revised to provide a complete and up-to-date basis for the new proceeding.

Recent studies indicate that the reprocessing of commercial LWR fuel for the recycle of uranium only will not be economically attractive. European nations and Japan are planning to recycle both uranium and plutonium following the reprocessing of spent fuel from commercial power plants. One of the benefits they expect from reprocessing and recycle of commercial power plant fuel is the buildup of a plutonium inventory for the breeder economy. If the U.S. re-evaluates the reprocessing and recycle options, the breeder economy should be included in the consideration.

The 1976 GESMO report and the record of the GESMO hearing up to its termination in December 1977 are based on information which is now out of date, especially in the areas of costs, nuclear power growth projections, and plans for radioactive waste management. We consider the changes in these areas to be of such magnitude and importance as to affect the outcome of the GESMO study. We, therefore, believe that it is essential to revise and update the GESMO study before reinstituting the public hearing process. We estimate that 6 to 9 months would be required to assemble the needed staff and from 18 months to 2 years to perform the study and to develop and publish the updated report which would serve as the basis for the public hearing. We believe that a year would be required to receive public comments on the report, publish the final document and conduct the public hearing.

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Factors affecting the scheduling of a reinstituted GESMO effort are the following:

- New waste management regulations for both high-level and low-level wastes are now being developed but will not be finalized until about the end of 1981.

- Contracts to support the new GESMO study will require 12 to 18 months for obtaining proposals, selecting a contractor, and completing the work.

- The performance of the study and the writing of the report will require about 18 months, with additional time for NRC internal reviews and revisions.

- If GESMO is completely redone, including consideration of breeders, the uncertainties are such that an additional year's effort for both staff and contractors may be required at approximately the level shown for the third year.

We have estimated the resource requirements for a compl[illegible]pdating of the GESMO study as shown in the tabulation below. It mus[illegible]noted that these estimated resource requirements are incremental to [illegible]oposed budget levels. If NRC is directed to accomplish this work [illegible]out a corresponding increase in budget levels, some present on-going an[illegible]ojected programs will be sharply curtailed as resources are diverte[illegible] GESMO assignments. No effort has been made to develop the details of [illegible] GESMO resource requirements, as the scope and content of work to [illegible] required of us are not known. The resource estimates given below should be regarded as first approximations only, intended to give an idea of the magnitude of resource requirements and the approximate length of time required to update the GESMO report and conduct a new public hearing proceeding.

	LWR Fuel Cycle Only			LWR & Breeder Fuel Cycles		
	1st Yr	2nd Yr	3rd Yr	1st Yr	2nd Yr	3rd Yr
Staff Requirements						
NMSS	20	24	22	[illegible]4	30	29
Other	[illegible]8	20	22	24	26	24
Total	38	44	44	48	56	53
Contractual Support (thousands of dollars)						
NMSS	1,350	1,800	750	1,800	2,600	850
ADM	925	455	550	925	455	550
RES	0	0	0	12,000	20,000	10,000
Total	2,275	2,255	1,300	14,725	23,055	11,400

(Signed) John G. Davis

John G. Davis, Deputy Director
Office of Nuclear Material Safety
and Safeguards

cc: Mr. Dircks
Mr. Minogue
Mr. Denton
Mr. Stello
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bcc: FC Central File
NMSS r/f
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WET r/f
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GATerry
TFCarter
RECunningham
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FCTA	FCOT	FC	FC	NMSS
WEThompson:mpm	GATerry	TFCarter	RECunningham	JGDavis
8/7/80	8/7/80	8/ /80	8/ /80	8/ /80

ADDITIONAL INFORMATION FOR THE TRANSITION TEAM

Minimum Number of Sites to be Characterized for a Geologic High Level Waste Repository

The rule 10 CFR 60, "Disposal of High-Level Radioactive Wastes in Geologic Repositories--Licensing Procedures," currently is being considered by the Commission for publication in final form. As a part of this regulation action the staff is preparing to amend 10 CFR 51.40 by adding a new subsection (d) which will state, in part: "The Commission considers the characterization of three sites representing two geologic media to be the minimum necessary to satisfy the requirements of NEPA. However, in light of the significance of the decision selecting a site for a repository, the Commission fully expects the DOE to submit a wider range of alternatives than the minimum suggested here."

The proposed final rule does not categorically require in situ testing at depth in the rule, since it is conceivable that in some instances at a particular site the data needed to establish that the site is suitable to host a repository may be obtained without in situ testing at depth. DOE, like any applicant for an NRC license, has the burden of establishing that NRC requirements have been met, and the regulations require DOE to undertake any testing needed to determine the suitability of the site for a geologic repository. Thus, if DOE chose not to explore at depth it would not be relieved in any way of the burden of obtaining and supplying to the Commission information needed to establish the suitability of the site.

Under the proposed final rule, DOE may submit its application for a construction permit prior to the completion of site characterization of the proposed site or alternatives. However, before the beginning of the public

hearing concerning issuance of the construction permit the characterization of the proposed site and the alternatives must be completed.

"Pat Down" Search Rule

The proposed search procedures for power reactor (revision to 10 CFR 73.55) were published on December 1, 1980, for public comment. The proposed rule requires:

- searches, using explosives and metal detection equipment, of everyone entering a protected area; and,
- in addition, a "pat down" search for all visitors.

In the event that detection equipment is not operable at a portal, a "pat down" search will be made of everyone using that portal. If there is cause to suspect that an employee is carrying contraband, a "pat down" search is required of that employee.

Until the new requirements become effective, currently ongoing interim measures will continue. These interim measures consist of an equipment search of all persons entering the protected area plus a pat down search of all visitors of a sample of licensee non-site employees.

The final date for comment on the proposed rule is January 15, 1981. The staff anticipates a final rule approximately 60 to 90 days following the close of the comment period.