

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION



In the Matter of)

) Docket No. RM-50-3

) Amendment of 10 CFR Part 51
) Licensing of Production and
) Utilization Facilities
) (Environmental Effects of
) the Uranium Fuel Cycle)

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

MOTION BY THE STATES OF NEW YORK,
WISCONSIN AND OHIO FOR THE AMEND-
MENT OF TABLE S-3, 10 CFR § 51.20(e)

A.

The States of New York, Wisconsin and Ohio move to amend Table S-3, 10 CFR § 51.20(e), to account for the commitment of economic resources necessitated by the various nuclear waste management activities involved in the uranium fuel cycle. This motion is based on the record of the reopened hearing which was forwarded to the Commission by the Hearing Board. (Hearing Board's Report, dated August 31, 1978). To provide a background for the substantive discussion of this motion it is appropriate to first review some of the procedural history of this rulemaking.

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On August 16, 1978 the Commission announced that it would reopen this rulemaking in response to the specific refusal of the Court of Appeals in NRDC v. NRC* to uphold the prior conclusions of the Commission concerning the impacts of fuel reprocessing and waste management as embodied in Table S-3, 10 CFR § 51.20(e). The Commission announced that it would reopen this rulemaking for the purposes of:

- "1. Supplementing the record on the reprocessing and waste management issues; and
2. Determining whether or not on the basis of the supplemented record, Table S-3 of 10 CFR § 51.20(d) should be amended and, if so, in what respect." 41 Fed. Reg. 34704, at 34708 (August 16, 1976).

Thereafter, a Hearing Board was appointed by the Commission and proceedings commenced.

Pursuant to the procedures adopted by the Hearing Board, the States of New York, Wisconsin and Ohio, full participants in this rulemaking, filed certain testimony relating to the economic costs of the relevant fuel cycle activities as well as answers to questions and answers to follow-up questions. Staff filed data, purportedly relevant

*547 F. 2d 633 at 653 (D.C. Cir. 1976), reversed and remanded sub nom. Vermont Yankee Nuclear Power Corporation v. NRDC, 435 U.S. 519 (1978).

to the economic feasibility of its reprocessing and waste management model, and answers to questions on that data, and the States filed rebuttal statements. In addition the Staff and State of New York presented oral testimony on these issues on March 28 and 30, 1978.*

It is the position of the States that, on the basis of the supplemented record, Table S-3 should be amended to account for the commitment of economic resources necessitated by various waste management activities.** An exclusion of economic values from Table S-3 would

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*The State of New York's filings in this area include the following: Statement of Peter N. Skinner on Behalf of the State of New York, dated September 30, 1977 and Errata; Answers to Questions, dated December 2, 1977; Answers to Follow-Up Questions, dated December 30, 1977; Oral Testimony, given March 30, 1978; Written Responses to Hearing Board's Oral Questions, sworn to April 20, 1978; and Rebuttal Statement on Behalf of the State of New York, served May 29, 1978.

**This motion to amend Table S-3 deals with an issue separate and distinct from the issue of "economic feasibility." Economic feasibility is a threshold issue for Commission determination. In order to promulgate the Table S-3 rule, the Commission must as a preliminary matter determine that the nuclear waste management portion of the fuel cycle envisioned by staff as a basis for Table S-3 is economically feasible. (Commission's Order, dated February 9, 1978, and Hearing Board's Memorandum and Order, dated December 23, 1977). The States submit that the record in this proceeding does not support a finding of economic feasibility and that the Table must be rejected. Moreover, the States submit that the record mandates a finding of economic infeasibility. See State of New York's Closing Statement (November 17, 1978). If the Commission should nevertheless accept the Table S-3 rule, it must be amended in accordance with this motion.

not only be contrary to the Commission's own statements regarding this reopened proceeding, but contrary to the law governing the rulemaking. As the Court of Appeals stated in NRDC v. NRC, supra at 641:

"Decisions to license nuclear reactors which generate large amounts of toxic wastes requiring special isolation from the environment for several centuries are a paradigm of 'irreversible and irretrievable commitments of resources' which must receive 'detailed' analysis under § 102(2)(c)(v) of NEPA, 42 U.S.C. § 4332(2)(C)(v). We therefore hold that absent effective generic proceedings to consider these issues, they must be dealt with in individual licensing proceedings."

In reaching that determination the Court reasoned that, "[o]nce a series of reactors is operating, it is too late to consider whether the wastes they generate should have been produced, no matter how costly . . . reprocessing and waste disposal turn out to be . . ." Id. at 640 (Emphasis supplied).

The Supreme Court subsequently concurred in that finding. In holding that the Commission acted within its statutory authority when it considered the back-end of the fuel cycle in individual licensing proceedings, the Supreme Court stated in Vermont Yankee Nuclear Power Corporation v. NRDC:*

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*435 U.S. 519 (1978) reversing and remanding on other grounds NRDC v. NRC, 547 F. 2d 633 (D.C. Cir. 1976).

"Vermont Yankee will produce annually well over one hundred pounds of radioactive wastes, some of which will be highly toxic. The Commission itself, in a pamphlet published by its information office, clearly recognizes that these wastes 'posit the most severe potential health hazard....' Fox, Radioactive Wastes, AEC No. 1B-508, 14-15 (Rev. Ed. 1969). Many of these substances must be isolated for anywhere from 600 to hundreds of thousands of years. It is hard to argue that these wastes do not constitute 'adverse environmental effects which cannot be avoided should the proposal be implemented,' or that by operating nuclear power plants we are not making 'irreversible and irretrievable commitments of resources.' 42 U.S.C. § 4332(2)(C)(ii), (V)."

The Commission's regulations acknowledge the need to consider the impacts of reactor operation prior to reactor licensing. For each nuclear reactor construction permit application an Environmental Report must be prepared which

"(b). . . shall include a cost-benefit analysis which considers and balances the environmental effects of a facility and the alternatives available for reducing or avoiding adverse environmental effects as well as the environmental, economic, technical and other benefits of the facility. The cost-benefit analysis shall to the fullest extent practicable quantify the various factors considered. . . . The Environmental Report should contain sufficient data to aid the Commission in its development of an independent cost-benefit analysis." 10 CFR § 51.20(b) (1977) (Emphasis supplied).

The regulations further state that

"(d) The information submitted pursuant to paragraphs (a) - (c) of this section should not be confined to data supporting the proposed action but should include adverse data as well."
10 CFR § 51.20(d) (1977) (Emphasis supplied).

To exclude adverse data would, of course, fatally prejudice the cost-benefit analysis.

In terms of the uranium fuel cycle activities which are necessary to support reactor operation and protect man and his environment from reactor wastes, the Commission's rules make special provision:

"(e) In the Environmental Report required by paragraph (a) for light-water-cooled nuclear power reactors, the contribution of the environmental effects of uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, reprocessing of irradiated fuel, transportation of radioactive materials and management of low level wastes and high level wastes related to uranium fuel cycle activities to the environmental costs of licensing the nuclear power reactor, shall be as set forth in the [Table S-3]. No further discussion of such environmental effects shall be required."
10 CFR § 51.20(e) (1977) (Emphasis supplied).

Thus, inclusion in Table S-3 of economic data relating to the back-end of the fuel cycle is mandated by the Commission's

regulation which states that the impacts of the entire uranium fuel cycle are to be quantified in Table S-3 and that no further discussion of those impacts is required beyond Table S-3.

Presently, Table S-3 is expressed in terms of the acres of land which will temporarily and permanently be committed as a result of the fuel cycle, the millions of gallons of water to be used, the fossil fuel to be consumed, the quantities of radioactive solids, liquids and gases to be discharged, and the unavoidable man-rem exposure to workers and the general public. All of these costs, which include those resulting from reprocessing and waste management, are quantified in the Table. However, the Table does not state how many dollars will be used or irretrievably committed as a result of reactor operation and the fuel cycle activities, such as waste management, which are crucial to the protection of man and his environment.

Consequently, adverse cost data concerning such activities are not uniformly being placed in Environmental Reports. Such is not the case with Table S-4 (10 CFR § 51.20[g][1] [1977]) which does address the economic "risk" of transportation of fuel and waste to and from reactors. In the case of Table S-3, the costs which have been omitted

are unavoidable, direct and quantifiable; not mere "risks" of operation as are damages from transportation accidents.

The true costs associated with the waste management and fuel reprocessing portions of the uranium fuel cycle involve the irretrievable commitment of economic resources. Thus the assessment and inclusion of these costs in Table S-3 are fundamental to compliance with the National Environmental Policy Act, § 102(2)(D) and essential to an accurate balancing of costs and benefits by the Commission as mandated by 10 CFR § 51.20(b). Moreover, the Council on Environmental Quality Guidelines on the preparation of environmental impact statements require an assessment of these costs:

"(ii) Secondary or indirect, as well as primary or direct, consequences for the environment should be included in the analysis. Many major Federal actions, in particular those that involve the construction or licensing of infrastructure investments (e.g., highways, airports, sewer systems, water resource projects, etc.), stimulate or induce secondary effects in the form of associated investments and changed patterns of social and economic activities. Such secondary effects, . . . through inducing new facilities and activities, or through changes in natural conditions, may often be even more substantial than the primary effects of the original action itself."
40 C.F.R. § 1500.8(a)(3)(ii) (1977)
(Emphasis supplied).

There could be no more appropriate application of this section of the CEQ guidelines than to the economic impacts of waste management activities.

The Commission has made a determination to utilize this generic proceeding to fulfill its duty to ascertain the costs to society necessitated by the production of high and low level wastes through reactor operation, rather than postpone the assessment to litigation in each individual reactor licensing proceeding. A discussion and assessment of these economic costs is now part of the record of this proceeding through the efforts of the States.

The States have presented testimony in this proceeding which indicates that the direct costs of the fuel cycle activities of waste management and fuel reprocessing are extremely significant. Some of the specific activities within the general headings of fuel reprocessing and waste management categories listed in 10 CFR § 51.20(e), which are discussed in the statement of Peter N. Skinner and which entail significant costs, include:

- (1) low level waste burial and long term operation of sites;
- (2) retrievable spent fuel surface storage facility operations and facility decontamination and decommissioning;
- (3) operations of federal repositories for
 - (a) disposal and management of high level wastes from fuel reprocessing and/or
 - (b) disposal and management of spent fuel;

(4) fuel reprocessing operations and facility decontamination and decommissioning;

(5) reactor operation and reactor decontamination and decommissioning.

(6) governmental monitoring, surveillance, emergency preparedness, technological research and development for waste management and fuel reprocessing.

For example, as Mr. Skinner's written statement indicates, the ultimate cost of reactor decontamination, decommissioning and waste disposal will be in the range of \$1.01 to \$3.13 billion for a typical 1000 MWe light water reactor. (See Answers of Peter N. Skinner to Questions, dated December 2, 1977, p. 26). These costs are not, as some might claim, included in "fuel costs." It is significant that the General Accounting Office has, after lengthy investigation, stated that the:

"NRC has not paid much attention to one of the biggest problems that may confront the public in the future -- that is, who will pay the cost of decommissioning nuclear power reactors. It has not made any plans or established any requirements for advanced accumulation of funds for decommissioning reactors or any facilities it licenses with the exception of uranium mills." General Accounting Office, "Cleaning Up the Remains of Nuclear Facilities - A Multibillion Dollar Problem" (EMD-77-46), June 16, 1977).

Such a cost is but one of the many which are incurred through reactor operation; the costs of protecting the

environment from other reactor wastes, such as spent fuel, are likewise substantial. Exclusion of these costs renders individual cost-benefit analyses for reactor licensing proposals hopelessly invalid.

The purpose of this rulemaking was to develop a thorough record on all the true costs emanating from the waste management and reprocessing portions of the fuel cycle, whether they be expressed in terms of acres, gallons or dollars. The States feel that the testimony of Mr. Skinner has done just that; it deals specifically with the economic burdens and impacts of the reprocessing and waste management portions of the uranium fuel cycle as those portions are envisioned technologically by staff in NUREG-0116 and NUREG-0216 and by the Department of Energy. The inclusion in Table S-3 of the true costs necessitated by the back-end of the uranium fuel cycle is, as demonstrated above, required by law.

As noted, the Commission determined that this rulemaking should be reopened to supplement the record on the reprocessing and waste management issues and to determine "whether or not on the basis of the supplemented record Table S-3 of 10 CFR 51.20(d) should be amended and, if so, in what respect." 41 Fed. Reg. 34707 at 34708 (August 16, 1976). The States believe the record of this proceeding

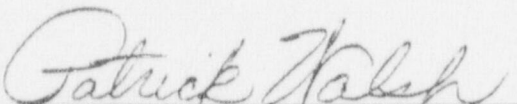
now clearly indicates that Table S-3 must be amended as indicated in Attachment "A" to this Motion so as to account for the significant economic impacts described above. If the Commission now finds that the record has not been adequately supplemented so as to enable it to make such a determination, the States then move in the alternative to reopen these hearings once again to further develop the record for this purpose.

CONCLUSION

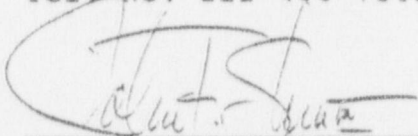
TABLE S-3 MUST BE AMENDED SO AS
TO ACCOUNT FOR THE COMMITMENT
OF ECONOMIC RESOURCES NECESSITATED
BY NUCLEAR WASTE MANAGEMENT
ACTIVITIES

Dated: New York, New York
DECEMBER 15, 1978


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ATTACHMENT A

AMENDMENT OF TABLE S-3

COMMITMENT OF ECONOMIC RESOURCES*

COST CATEGORY	COST/RRY (MILLIONS \$)
LOW LEVEL WASTE DISPOSAL	0.058 - 0.116
FUEL POOL STORAGE	0.35 - 2.625
TRANSPORTATION	0.525 - 1.75
SPENT FUEL CONTAINERS	0.8 - 1.05
GEOLOGICAL REPOSITORY	1.08 - 5.25
DISMANTLING	6.2 - 27.6**
	<u>TOTAL</u> 8.913 - 38.391

*ALL AMOUNTS IN 1977 DOLLARS

**ASSUMED REACTOR COST \$1.3 BILLION
REACTOR LIFE 30 YEARS
BUILDING COSTS INDEX (BCI) RANGE
CONSIDERED 4-8%
RATE-OF-RETURN (ROI) RANGE
CONSIDERED 6-10%

NOTE: TO CALCULATE THE RANGE OF COST/RRY
FOR A REACTOR COSTING OTHER THAN THE
\$1.3 BILLION USED, MULTIPLY THE
APPROPRIATE ORIGINAL FACILITY COST
IN 1977 DOLLARS FIRST BY 0.48% AND
THEN BY 2.1%, ENTER COST RANGE INTO
TABLE.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies this 15th day of December, 1978 that the Motion By The States For The Amendment Of Table S-3 dated December 15, 1978 was served by first class mail, postage prepaid, on the 15th day of December, 1978 on the following persons:

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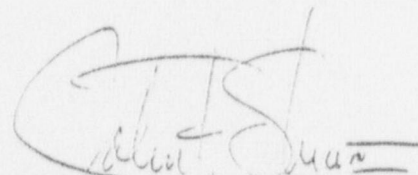
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