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TITLE: PR-020,150 - 39FR32921 - TRANSURANIC WASTE DISPOSAL

CASE REFERENCE: PR-020,150 39FR32921

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STATUS OF RULEMAKING

PROPOSED RULE: PR-020,150 OPEN ITEM (Y/N) N RULE NAME: TRANSURANIC WASTE DISPOSAL PROPOSED RULE FED REG CITE: 39FR32921 PROPOSED RULE PUBLICATION DATE: 09/12/74 NUMBER OF COMMENTS: 36 ORIGINAL DATE FOR COMMENTS: / / EXTENSION DATE: / / FINAL RULE FED. REG. CITE: FINAL RULE PUBLICATION DATE: / / NOTES ON: VOLUME 1(9/3/74 - 11/12/74). STATUS : OF RULE :

HISTORY OF THE RULE

PART AFFECTED: PR-020,150

RULE TITLE: TRANSURANIC WASTE DISPOSAL

| PROPOSED RULE SECY PAPER: | PROPOSED RULE SRM DATE: | / | / | DATE PROPOSED RULE SIGNED BY SECRETARY: | 09/03/74 |
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| FINAL RULE SECY PAPER: | FINAL RULE SRM DATE: | / | / | DATE FINAL RULE SIGNED BY SECRETARY: | / / |

STAFF CONTACTS ON THE RULE

| CONTACT1: | MAIL STOP: | PHONE : |
|------------|------------|---------|
| CONTACT2 : | MAIL STOP: | PHONE : |
| | | |

DOCKET NO. PR-020,150 (39FR32921)

In the Matter of

TRANSURANIC WASTE DISPOSAL

| DATE DOCKETED | DATE OF Document | TITLE OR DESCRIPTION OF DOCUMENT |
|------------------|---------------------|---|
| 09/03/74 | 09/03/74 | FEDERAL REGISTER NOTICE - PROPOSED RULE (PR-20) (39FR32921) PUBLISHED ON 09/12/74 |
| 09/03/74 | 09/03/74 | FEDERAL REGISTER NOTICE - PROPOSED RULE (PR-150) (39FR32922) PUBLISHED ON 09/12/74 |
| 09/24/74 | 09/18/74 | COMMENT OF TEXAS STATE DEPARTMENT OF HEALTH (WUKASCH) (1) |
| 10/08/74 | 09/23/74 | COMMENT OF USEPA (PR-20) (MEYERS) (2) |
| 10/08/74 | 09/23/74 | COMMENT OF USEPA (PR-150) (MEYERS) (3) |
| 10/18/74 | 10/18/74 | COMMENT OF K. H. PUECHL (4) |
| 10/18/74 | 10/18/74 | COMMENT OF AIF (WALSKE) (5) |
| 10/21/74 | 10/17/74 | COMMENT OF COLORADO DEPARTMENT OF HEALTH (HAZLE) (6) |
| 10/31/74 | 10/28/74 | COMMENT OF ALLIED-GENERAL (PRICE) (7) |
| 11/04/74 | 10/31/74 | COMMENT OF WESTINGHOUSE (SCHENDEL) (8) |
| 11/04/74 | 10/25/74 | COMMENT OF AIF (DEUSTER) (9) |
| 11/04/74 | 10/31/74 | COMMENT OF NUCLEAR ENGINEERING CO., INC. (NEEL) (10) |
| 11/11/74 | 11/05/74 | COMMENT OF RG&E (DRAKE) (11) |
| 11/12/74 | 11/06/74 | COMMENT OF GE (TSCHAECHE) (12) |
| 11/12/74 | 11/08/74 | COMMENT OF GENERAL ATOMIC CO. (HOGAN) (13) |
| 11/12/74 | 11/08/74 | COMMENT OF ARKANSAS POWER & LIGHT (WOODARD) (14) |
| 11/12/74 | 11/08/74 | COMMENT OF DUQUESNE LIGHT (SCHAFFER) (15) |
| 11/12/74 | 11/08/74 | COMMENT OF NE UTILITIES (SWITZER) (16) |

DOCKET NO. PR-020,150 (39FR32921)

| DATE DOCKETED | DATE OF Document | TITLE OR DESCRIPTION OF DOCUMENT |
|------------------|---------------------|--|
| 11/12/74 | 11/08/74 | COMMENT OF NEBRASKA PUBLIC POWER DISTRICT (COOPER) (17) |
| 11/12/74 | 11/07/74 | COMMENT OF SMUD (MATTIMOE) (18) |
| 11/12/74 | 11/08/74 | COMMENT OF COMM. ED. (NEXON) (19) |
| 11/12/74 | 11/08/74 | COMMENT OF SOUTHERN CALIFORNIA EDISON (MOORE) (20) |
| 11/12/74 | 11/08/74 | COMMENT OF CON EDISON (NEWMAN) (21) |
| 11/12/74 | 11/08/74 | COMMENT OF CINCINNATI GAS & ELECTRIC (DICKHONER) (22) |
| 11/18/74 | 11/11/74 | COMMENT OF CONSUMERS POWER (LAMLEY) (23) |
| 11/18/74 | 11/08/74 | COMMENT OF ILLINOIS POWER (GERSTNER) (24) |
| 11/18/74 | 11/07/74 | COMMENT OF FLORIDA POWER & LIGHT (UHRIG) (25) |
| 11/18/74 | 11/11/74 | COMMENT OF BOSTON EDISON (STASZESKY) (26) |
| 11/18/74 | 11/11/74 | COMMENT OF NFS (CLARK) (27) |
| 11/18/74 | 11/11/74 | COMMENT OF DUKE POWER (THIES) (28) |
| 11/18/74 | 11/11/74 | COMMENT OF DETROIT EDISON (MEESE) (29) |
| 11/18/74 | 11/11/74 | COMMENT OF TEXAS STATE DEPARTMENT OF HEALTH (WUKASCH) (30) |
| 11/18/74 | 11/11/74 | COMMENT OF VEPCO (RAGONE) (31) |
| 11/18/74 | 11/12/74 | COMMENT OF SAN DIEGO GAS & ELECTRIC (ZITLAU) (32) |
| 11/25/74 | 10/16/74 | COMMENT OF NEW ENGLAND NUCLEAR (KILLIAN) (33) |
| 12/03/74 | 11/27/74 | COMMENT OF ATOMIC ENERGY COUNCIL (NY) (MOYLAN) (34) |
| 12/03/74 | 11/25/74 | COMMENT OF BURNS & ROE, INC. (ZWICKLER) (35) |
| 12/06/74 | 11/29/74 | COMMENT OF USEPA ~ D.C. (MEYERS) (36) |

ATOMIC ENERGY COMMISSION

(10 CFR Part 150) EXEMPTIONS AND CONTINUED REGULATORY AUTHORITY IN AGREEMENT STATES UNDER SECTION 274

Disposition of Transuranic Waste

Section 150.15 of 10 CFR Part 150 states that persons in Agreement States are not exempt from the Commission's licensing and regulatory requirements with respect to, <u>inter alia</u>, the disposal of such byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be disposed of without a license from the Commission.

The Commission is publishing proposed amendments of 10 CFR Part 20 that would provide that disposal of transuranium elements (atomic number greater than 92) by burial in soil by licensees will not be authorized. This waste would be solidified (if liquid), packaged and transferred to the AEC as soon as practicable but within five years after its generation. The AEC would be responsible for subsequent storage, treatment and disposal of such waste. The AEC would take title to the waste upon delivery and would levy a fee on the generator of the waste to cover all costs for subsequent management. Consistent with the policy expressed in the proposed amendments, the Commission is considering a determination that waste containing or contaminated with transuranium elements should not, because of the potential hazards thereof, be disposed of by persons in an Agreement State. The effect of

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this determination would be to reassert the Commission's authority in Agreement States over the disposal of transuranium elements by burial in soil. The proposed amendment to § 150.15 of Part 150 which follows would reflect the proposed determination.

Transuranic wastes generally consist of, but are not restricted to, (a) expendable material such as absorbent tissues, clothing, gloves, plastic bags, and equipment; (b) solids such as ion exchange resins or filters from effluent treatment systems; (c) solidified liquid wastes, such as condensate and waste streams from process operations; (d) fuel hulls which remain after fuel reprocessing operations; and (e) liquid or solid wastes which contain or are contaminated with transuranium elements, resulting from reprocessing operations, that are not classified as high level waste. For example, all wastes originating in restricted areas of plutonium processing and fuel fabrication facilities fuel reprocessing facilities (except high level wastes), and laboratories using transuranium elements not in sealed sources should be considered transuranic waste and handled as such.* Radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions.*

* Measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste. Waste that is suspect, but which has been measured and is not contaminated with more than 10 nanocuries per gram should be consigned to a licensed burial ground. A sensitivity of 10 nanocuries per gram for measurement has been chosen as a guide since it represents the upper range of concentration of radium in the earth's crust. In terms of long half life and radiotoxicity, transuranium elements are comparable to radium. It appears reasonable, therefore, to permit the burial of waste which might contain transuranic elements in such concentrations, or below, in licensed burial sites.

- 2 -

The quantities of transuranium elements (mostly plutonium) thus far buried in licensed commercial grounds are estimated to be about 80 kilograms dispersed through a large volume (about 7.5 million cubic feet) of material. . In the evaluation of proposed licensed burial sites for radioactive wastes, two primary aspects are considered: (a) the geological, hydrological, and climatological characteristics of a site must be such that waste, once placed in the ground, will not migrate so as to have a significant impact on man or the environment; and (b) the burial grounds must be on land owned by the Federal or a state government to assure long-term control. Chemical and physical characteristics of plutonium are such that migration in soil or groundwater is unlikely. Deep well water samples taken at the perimeter of the burial sites have not shown any detectable plutonium (the principal transuranium element), thus indicating that the buried plutonium has remained immobile. On the basis of the foregoing, the Commission has concluded that the plutonium already buried does not constitute a potential hazard to man or the biosphere and thus should not be required to be removed from burial. Continued surveillance of the burial sites will be maintained to assure that a potential hazard does not develop.

- 3 -

Because of an anticipated increase in the quantities of wastes containing or contaminated with transuranium elements, the long half-life of transuranium elements, and their high specific radiotoxicity, the Commission believes that in the future, storage and disposal of such waste at Government-owned facilities should replace disposal in licensed commercial burial grounds. Such storage and disposal would provide a greater assurance against escape of the material to the biosphere, than would nearsurface burial in commercial burial grounds. The Commission is also considering whether radionuclides other than those covered by this proposed regulation, because of potential hazards, should also be earmarked for management by the AEC, and it may propose further rule making actions in this regard.

The Commission will accept AEC and Agreement State licensee generated transuranic waste at designated Commission sites. Waste form specifications, packaging requirements, and charges will be published as a Miscellaneous Notice Concerning Commission Prices, Services, and Agreements. The Commission will continue to require, through the safety and safeguards reviews of licensed operations, that actions must be taken by its licensees to minimize to the extent possible the generation of transuranic wastes and would expect Agreement States to adopt similar requirements. Accordingly, concurrent with adoption in final form of the proposed amendments to 10 CFR Part 20, the following amendment to 10 CFR Part 150 would be made.

Pursuant to the Atomic Energy Act of 1954, as amended, and Section 553 of Title 5 of the United States Code, notice is hereby given that adoption of

- 4 -

the following amendment of 10 CFR Part 150 is contemplated. All interested persons who desire to submit written comments or suggestions for consideration in connection with the proposed amendment should send them to the Secretary of the Commission, U.S. Atomic Energy Commission, Washington, D. C. 20545, Attention: Dockets and Service Section, by November 11, 1974. Copies of comments on the proposed amendments may be examined at the Commission's Public Document Room at 1717 H Street, N. W., Washington, D. C.

Paragraph 150.15 (a) is amended to add a new paragraph (7) to read as follows:

§ 150.15 Persons not exempt.

*

(a) Persons in Agreement States are not exempt from the Commission's licensing and regulatory requirements with respect to the following activities:

(7) The disposal of transuranium elements (atomic number greater than 92) by burial.

(Secs. 53, 161, 274, Pub. Laws 83-703, 86-373 and 88-489, 68 Stat 930, 948, 73 Stat 688, 78 Stat 602; (42 U.S.C. 2021, 2073, 2201))

Dated at Germantown, Maryland this 4th day of September 1974.

For the Atomic Energy Commission 000 Acting Secretary of the Commission 5-

ATOMIC ENERGY COMMISSION

(10 CFR Part 20) STANDARDS FOR PROTECTION AGAINST RADIATION

Disposition of Transuranic Waste

The Atomic Energy Commission is considering the amendment of its regulations in 10 CFR Part 20, "Standards for Protection Against Radiation," to prohibit the disposal by burial in soil of transuranium elements. Transuranic waste would be required to be transferred to the AEC for storage as soon as practicable but within five years after its generation. The AEC would be responsible for subsequent storage, treatment and disposal of such waste. The AEC would take title to the waste upon delivery, and would levy a fee on the generator of the waste to cover all cost for subsequent management.

Section 20.304 of Part 20 presently permits the disposal of specified small quantities of transuranic elements by burial without specific approval of the Commission. Under the proposed amendment, this provision would be revoked. A new § 20.302(d) would be added which provides that disposal of transuranium elements by burial in soil will not be authorized by the Commission. Such waste material would be required to be solidified (if necessary), packaged and transferred to the AEC as soon as practicable but within five years after its generation. Any license authorizing disposal of transuranic elements by burial would be amended to revoke such authority as of the effective date of the new regulations.

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Transuranic wastes generally consist of, but are not restricted to, (a) expendable material such as absorbent tissues, clothing, gloves, plastic bags, and equipment; (b) solids such as ion exchange resins or filters from effluent treatment systems; (c) liquid and solidified liquid wastes, such as condensate and waste streams from process operations; (d) fuel hulls which remain after fuel reprocessing operations; and (e) wastes which contain or are contaminated with transuranium elements resulting from reprocessing operations that are not classified as high level waste. For example, all wastes originating in restricted areas of plutonium processing and fuel fabrication facilities, fuel reprocessing facilities (except high level wastes), and laboratories using transuranium elements not in sealed sources should be considered transuranic waste and handled as such.* Radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions.*

*Measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste. Waste that is suspect, but which has been measured and is not contaminated with more than 10 nanocuries per gram should be consigned to a licensed burial ground. A sensitivity of 10 nanocuries per gram for measurements has been chosen as a guide since it represents the upper range of concentration of radium in the earth's crust. In terms of long half-life and radiotoxicity, transuranium elements are comparable to radium. It appears reasonable, therefore, to permit the burial of waste which might contain transuranic elements in such concentrations, or below, in licensed burial sites.

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The quantities of transuranium elements (mostly plutonium), thus far buried in licensed commercial burial grounds are estimated to be about 80 kilograms, in discrete packages, dispersed in a large volume (about 7.5 million cubic feet) of buried waste material.

In the evaluation of proposed licensed burial sites for radioactive wastes, the Commission considers two primary aspects: (a) the geological, hydrological, and climatological characteristics of a site must be such that waste, once placed in the ground, will not migrate so as to have a significant impact on man or the environment; and (b) the burial grounds must be on land owned by the Federal or a state government to assure long-term control. Chemical and physical characteristics of plutonium (the principal transuranic element) are such that migration in soil or groundwater is unlikely. Deep well water samples taken at the perimeter of the burial sites have not shown any detectable plutonium, thus indicating that the buried plutonium has remained immobile. On the basis of the foregoing, the Commission has concluded that the plutonium already buried does not constitute a present hazard to man or the biosphere and thus should not be required to be removed from burial. Continued surveillance of the burial sites will be maintained to assure that a potential hazard does not develop.

Because of an anticipated increase in the quantities of wastes containing or contaminated with transuranium elements, the long half-life of transuranium elements, and their high specific radiotoxicity, the Commission believes that in the future, storage and disposal of such waste at Government owned facilities should replace disposal in licensed commercial burial

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grounds. Such storage and disposal would provide a greater assurance against escape of the material to the biosphere, than would near-surface burial in commercial burial grounds. The Commission is also considering whether radionuclides other than those covered by this proposed regulation and those covered by the currently effective regulation (Appendix F to 10 CFR 50), because of potential hazard should also be earmarked for management by the AEC, and it may propose further rule making actions in this regard.

The Commission will accept licensee generated transuranic waste at designated Commission sites. Waste form specifications, packaging requirements, and charges will be published as a Miscellaneous Notice Concerning Commission Prices, Services, and Agreements. In order to prevent accumulations of waste material at licensee plants, but at the same time taking into account the need for decay of short-lived isotopes, a new § 20.306 would require transuranic waste to be solidified (if liquid), packaged and transferred to the Commission as soon as practicable but within five years after its generation.

The Commission will continue to require, through the safety and safeguards reviews of licensed operations, that actions must be taken by licensees to minimize, to the extent possible, the generation of transuranic wastes.

A separate environmental impact statement is not required for the issuance of this proposed rule. The Commission is preparing an environmental impact statement on the management of high level and transuranic waste received from commercial operations.

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Paragraph 150.15(a)(5) of 10 CFR Part 150, "Exemptions and Continued Regulatory Authority in Agreement States under Section 274," provides that persons in Agreement States are not exempt from the Commission's licensing and regulatory requirements with respect to the disposal of such byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be disposed of without a license from the Commission. The Commission has under consideration such a determination in the case of waste containing or contaminated with transuranium elements. Concurrently with the proposed amendment to Part 20 which follows, a notice of this proposed determination is being published in the FEDERAL REGISTER. The effect of this determination would be to reassert the Commission's authority in Agreement States over the disposal of transuranic waste by burial.

Pursuant to the Atomic Energy Act of 1954, as amended, and Section 553 of Title 5 of the United States Code, notice is hereby given that adoption of the following amendment of 10 CFR Part 20 is contemplated. All interested persons who desire to submit written comments or suggestions should send them to the Secretary of the Commission, U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Dockets and Service Section, by November 11, 1974. Copies of comments on the proposed amendments

- 5 -

may be examined at the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C.

 Section 20.302 is amended by adding a new paragraph (d) to read as follows:

§ 20.302 Method for obtaining approval of proposed disposal procedures.

(d) The Commission will not approve any application for a license or license amendment for disposal of transuranium elements (atomic number greater than 92) by burial. Any license or license amendment authorizing disposal of transuranium elements by burial is hereby amended to revoke such authority as of (effective date of regulation amendment). Transuranic waste shall be disposed of in accordance with § 20.306.

2. Paragraph (a) of § 20.304 is amended to read as follows: § 20.304 Disposal by burial in soil. No licensee shall dispose of waste material by burial in soil unless:

(a) The total quantity of licensed and other radioactive materials
buried at any one location and time does not exceed, at the time of burial,
1000 times the amount specified in Appendix C of this part and does not
contain transuranium elements (atomic number greater than 92), and

3. A new § 20.306 is added to read as follows:

§ 20.306 Disposal of transuranic waste. Waste material containing or contaminated with transuranium elements (atomic number greater than 92) shall be solidified (if liquid), packaged, and transferred to the Atomic Energy Commission as soon as practicable but, in any event, within five years after its generation.

(Secs. 53, 161, Public Laws 83-703, 88-489, 68 Stat. 930, 78 Stat. 602 (42 U.S.C. 2073, 2201))

Dated at <u>Germantown</u>, Md. this <u>3rd</u> day of <u>September</u> 1974.

For the Atomic Energy Commission. Secretary of the Commission



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

NOV 29 1974

Mr. Gordon M. Grant Secretary to the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

Dear Mr. Grant:

Pursuant to our responsibilities under Section 309 of the Clean Air Act, as amended, the Environmental Protection Agency has reviewed your notices of proposed rulemaking setting forth revisions to 10 CFR Part 20 and 150 "Transuranic Waste Disposal" as published in the Federal Register of September 12, 1974.

Large volumes of transuranium-contaminated waste are expected to be generated during the production of power by nuclear means. This waste generally has a relatively high radiotoxicity and also has an extremely long life. Because of the anticipated volumes of this waste and its long-lived and radiotoxic characteristics, the AEC has proposed to require that the ownership and the responsibility for management of this waste be transferred to the Federal Government as soon as practicable after its generation. EPA feels that control of such hazardous waste must be exercised by the Federal Government, to assure that there will not be any unacceptable risk to public health or the environment either now or in the future. Therefore, EPA strongly supports the AEC's proposed policy that ownership and management of transuranium-contaminated waste be functions of the Federal Government.

EPA has submitted comments in regard to the management of this waste in our review of the draft environmental statement, "Management of Commercial High-Level and Transuranium-Contaminated Radioactive Waste" (WASH-1539). A copy of this review is enclosed as part of our comments on the proposed rulemaking since the AEC indicated that the environmental impact resulting from this rulemaking procedure would be addressed in the draft statement. While our comments on the draft statement addressed the total AEC management program for commercial waste, there are several issues which are specifically related to this rulemaking and which we believe should be emphasized.

Acknowledged by eard 12-6-74, eno

One of our major concerns regarding the proposed rulemaking is the AEC's interpretation of "as soon as practicable" in regard to the time period during which the waste may remain under the control of the waste generator. The AEC has not presented sufficient information to support their selection of five years as an acceptable period for interim storage at the site of waste generation. In our view, the five-year storage period may require the producer of the waste to utilize interim storage methods for which assured retrievability has not been demonstrated. In particular, we are concerned that shallow land burial of this waste may be used as an interim storage method. We believe that there may be serious problems in retrieving waste stored in such a manner, and if the waste cannot be retrieved, potentially serious environmental contamination could result. Based on these considerations, we believe the AEC should consider reducing the allowable interim storage period at the site of generation. While we recognize that a major justification for the five-year storage period is the presence of gamma emitting radionuclides in some of the alpha contaminated waste, we suggested that perhaps special consideration could be given to this waste since its volume is expected to be significantly less than the other alpha-contaminated waste. The rationale for considering separate requirements for this gamma emitting waste would be the reduction of the external component in potential personnel exposure.

We also believe that the AEC should reflect in any final rulemaking on this subject the realization that its policy concerning the recovery of already buried transuranium-contaminated waste from burial grounds may require periodic review, since data indicating the possible migration of these long-lived materials may arise as on-going and planned studies are completed at commercial burial sites. In addition, the AEC's proposed policy, which would normally exclude reactor waste, generated under normal operating conditions, from being considered transuranic waste, may also require review in the future since extensive detailed data on the transuranium-contamination of reactor waste are very sparse.

We commend the AEC in acknowledging that radionuclides other than those covered by the proposed rulemaking should be considered and may be the subject of future rulemaking actions. The radionuclides currently identified by EPA as being in this group include tritium, C-14, Kr-85 and I-129.

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We would be pleased to discuss these comments with representatives of the AEC.

Sincerely yours,

Sheldon Meyers

Sheldon Meyers Director Office of Federal Activities (A-104)

Enclosure

DOCKET NUMBER PP 20 + 150 (39 FR 32921)

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OFFICE OF THE SECRETAR

Transuranic Waste

Burns and Roe, Inc.

700 Kinderkamack Road - Oradell, New Jersey 07649 - Tel. N. J. (201) 265-2000 - N. Y. (212) 563-7700

TWX 710-990-6637 . Cable BUROE ORADELLNJ

Subject:

Breeder Reactor Division Clinch River Breeder Reactor Plant Transuranic Waste Disposal

> BZ 40087 November 25, 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

Attention: Dockets and Service Section

Dear Sir:

IAA/kf

W. O. 3067-02

The following comment is submitted with respect to proposed amendments in 10CFR Part 20 and 10CFR Part 150 on the subject of Transuranic Waste Disposal. The rules in question were published in the Federal Register of September 12, 1974 (Vol. 39, No. 178).

A footnote in the introduction to each amendment states:

"Waste that is suspect, but which has been measured and is not contaminated with more than 10 nanocuries per gram should be consigned to a licensed burial ground."

On the contrary, the actual text of the amendments contains no such provision, but prohibits all transuranic elements from burial in a licensed burial ground in absolute terms. We believe the text should be clarified to resolve this discrepancy.



Very truly yours,

Samuel Zwickler Licensing Manager

Acknowledged by card 12-3-74, ere



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PROPOSED LE PR-20+150 (34 FR 32921) Transuranic Waste

OFFICE OF THE SECRETARY

CHAIRMAN NEAL L. MOYLAN COMMISSIONER OF COMMERCE ATOMIC ENERGY COUNCIL Department of Commerce 99 Washington Avenue Albany, New York 12210

State of New York

STAFF COORDINATOR DR. WILLIAM E. SEYMOUR DEPUTY COMMISSIONER DIV. OF INDUSTRIAL SCIENCES AND TECHNOLOGIES

OCKETE

ISAEC

Public Proces

3 1974

November 27, 1974

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

ATTN: Dockets and Service Section

Dear Sir:

The cognizant member agencies of the New York State Atomic Energy Council have reviewed the proposed amendments to 10 CFR Parts 20 and 150 which apply to the disposal of transuranium contaminated wastes. The following comments are submitted for your consideration.

The Atomic Energy Council supports the reassertion of authority over the disposal of transuranic waste by the U.S. AEC. However, the proposed regulations (20.302, 304, 306), as written, appear to prohibit the burial of waste contaminated with trace amounts of transuranic materials, regardless of the amount of contamination. The Council recommends that the U.S. AEC incorporate provisions into the regulations to allow, at carefully selected commercial burial sites, the burial of waste contaminated with transuranic material up to a specific maximum concentration. Although the Council feels that 10 nCi/g is an extremely conservative value, we favor its use as the upper concentration limit, subject to the following considerations:

Prior to adoption of the regulations, guidance should be provided by the U.S. AEC to the industry and the states regarding acceptable methods for demonstrating that the upper concentration limit is not exceeded.

The U.S. AEC should provide the basis for the conclusion stated in the explanatory material that "radwaste from nuclear reactors would not generally be considered transuranic wastes under normal operating conditions." Currently, reactors are permitted to operate with a small number of cladding perforations and consequently LWR waste, such as resins most probably contain very small concentrations of

Acknowledged by card 12-3-74, era

Secretary of the Commission

transuranic material. In mixed oxide fueled reactors and breeder reactors these concentrations may be higher.

WASH-1539 refers to a disposal cost estimate for the nuclear power industry of approximately 0.1 mills per kilowatt hour for all radioactive waste. This apparently was based on an economic analysis which assumed that radwastes from nuclear power reactors would not be considered transuranic wastes and could be sent to a commercial burial ground for disposal. Based on the cost estimates for storage at the Federal repository presented in WASH-1539, if all such waste from nuclear reactors are treated as transuranium wastes, the disposal costs (excluding transportation) for this portion of the waste will increase by a factor of 20 to 30. Prior to the adoption of the regulations, the U.S. AEC should provide an analysis of the economic impact of the proposed regulations which should include the impact for current LWR waste, mixed oxide fueled reactors and breeder reactors.

The analysis should also consider the large volumes of building material which will result from the decommissioning of facilities such as fuels reprocessing plants, transuranic material production facilities and laboratories, and nuclear power plants that may be known or suspected to be contaminated with very small quantities of transuranic material.

The proposed regulations will prohibit the burial of certain quantities of transuranics in any commercial burial ground, yet Agreement States will be permitted to continue to license the burial of isotopes of equivalent radiotoxicity and half life (e.g. I-129, Ra-226). The U.S. AEC should clarify the public health basis for proposing burial restrictions on transuranics while excluding other materials of equivalent hazardousness. If these proposed regulations are required to protect the public health and safety, adoption of the regulations by the U.S. AEC may in effect require the states to extend these restrictions to other nuclides. It is recommended that the U.S. AEC consider the public health aspects of placing an upper concentration limit on the burial in soil of other radionuclides which are comparable to transuranics in longevity and radiotoxicity. In addition, the U.S. AEC should indicate whether radium and accelerator produced nuclides, which are not subject to regulation by the U.S. AEC, and other radionuclides which are as hazardous as transuranics will be accepted for storage at the Federal repository.

Certain smoke detectors which contain microcurie amounts of transuranics (e.g. Am-241) are widely distributed to members of the

Secretary of the Commission

-3-

November 27, 1974

general public, who are exempt from regulatory control. The U.S. AEC should indicate whether disposal of these devices will be subject to the proposed regulations.

The proposed Section 20.306 requires that liquid waste material contaminated with transuranium elements should be solidified, packaged and then transferred to the U.S. AEC. The U.S. AEC should provide guidance regarding acceptable methods for solidification of liquid wastes.

The explanatory section attached to the proposed amendments indicates the chemical and physical characteristics of plutonium are such that migration in soil or ground water is unlikely and that deep well water samples taken at the perimeter of burial sites have not shown any detectable plutonium, thus indicating that the buried plutonium has remained immobile. This section should identify where such analyses were performed and indicate whether other mechanisms for transport of the transuranium elements such as erosion of trenches, and surcharing of water from water filled trenches, were considered.

The Council appreciates the opportunity to review and comment on the proposed regulations.

Cordially

Neal L. Moylan Chairman

cc: Members of the Atomic Energy Council

- J. Bruce MacDonald, Esq.
- C. Thomas Hodsdon



Dear Sir:

On reading the proposed amendments to 10CFR20 (cited above) it becomes apparent that the intent is for the Commission to exercise more stringent controls over plutonium in particular. We agree with this.

New England Nuclear Corporation, Nuclides & Sources Division, has been for four years manufacturing alpha and gamma reference sources, X-ray excitation sources and neutron sources using Americium-241. In an average year we receive 50 curies of Americium-241 for fabricating these sources; five curies of Americium will be disposed of annually as waste via licensed waste contractors.

We do not believe it is the intent of the proposed regulations to include small quantities such as these. The proposed regulation, by using the all-inclusive term "transuranium elements", will also confuse – and create difficulties for – a researcher or small user who wishes to dispose of an Americium-241 reference source.

We feel that the proposed regulations should be clarified to include provisions for disposal of small amounts of transuranium elements generated as a result of source fabrication and the sources themselves.

Very truly yours,

NEW ENGLAND NUCLEAR CORP.

Charles B Killiam

Acknewledged by card 11-25-74, 010

Charles B. Killian Director, Environmental Control

cbk/eet

PROPOSED RULE PR-20+150 (39 FR 32921) Transurance Wille SAN DIEGO GAS & ELECTRIC COMPANY P. O. BOX 1831 SAN DIEGO. CALIFORNIA 92112 (714) 232-4252

WALTER A. ZITLAU PRESIDENT

FILE NO. FEB 000

November 12, 1974

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Reference: Proposed Rule Making on Transuranic Waste Disposal 39 Federal Register 32921 (September 12, 1974)

The following comments are submitted by San Diego Gas & Electric Company concerning the proposed rule making on transuranic waste disposal contained in the above referenced Federal Register Notice:

- 1. As co-operator of the San Onofre Nuclear Generating Station, as well as the future operator of the Sundesert Nuclear Power Plant, and co-operator of San Onofre Units 2 and 3 and San Joaquin Nuclear Power Station, San Diego Gas & Electric Company agrees that waste which contains substantial quantities of transuranic elements should be placed under federal control to assure maximum protection of the environment. We do not agree, however, that this requires federal operation of interim storage facilities for all transuranic-bearing waste as appears to be implied in the proposed rule. We believe it is both feasible and preferable for the handling of most waste, potentially encompassed by the proposed rule, to continue to be conducted on a licensed, commercial basis. In this way the efficiencies and economies of commercial activities can be retained, concurrently with government regulation, to assure maximum safety and security.
- 2. The proposed amendments to 10 CFR Parts 20 and 150 do not contain a technical definition of "transuranic waste". If the proposed rules were adopted, it would be necessary for the waste originator to assume the responsibility for measuring and certifying the transuranic content of all waste generated.

According to the Statements of Consideration for the proposed rules: "Radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions". The Statement goes on to say: "Measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive



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AN INVESTOR-OWNED CORPORATION



SAN DIEGO GAS & ELECTRIC COMPANY

U.S. Atomic Energy Commission November 12, 1974 Page Two FEB 000

to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste. Waste that is suspect, but which has been measured and is not contaminated with more than 10 nanocuries per gram should be consigned to a licensed burial ground".

In the absence of further clarifying language the above quoted excerpt from the Statement appears to imply that "suspect" waste which cannot or has not been measured must be consigned to the AEC whether significantly contaminated with transuranic materials or not. This could have the effect of being interpreted as requiring the measurement of every waste shipment and in the long run of directing more waste to the AEC.

3. For commercial wastes which frequently contain beta/gamma emitting substances, there is no practical way in which a 10 nanocurie per gram "guideline" could be routinely measured after waste collection and packaging. There are no known non-destructive methods either available or under development for the external assay of transuranic content when the contents of a container are also substantially beta/gamma active.

Such measurements would have to be made at the point of origin, are difficult and expensive, and involve significant radiation exposure to operating personnel. One example is the measurement of the plutonium content of spent demineralizer resins from nuclear power plants.

4. The proposed rules also lack definite statements on the technical specifications and charges for the solidified wastes assigned to the AEC. Without specific information, there is no way for originators of such wastes to assess the impact on their operation or any means for demonstrating compliance if the rules were to be adopted. Because this contemplated change could have a significant economic impact on the entire nuclear industry, the proposed rule making should be deferred until such information is available for consideration as part of the rule making action.

... more



U. S. Atomic Energy Commission November 12, 1974 Page Three

FEB 000

An example of how these proposed rules might have a detrimental effect follows:

Storage charges of \$30 to \$50 per stored cubic foot for transuranic contaminated waste have been estimated by the AEC and Battelle Pacific Northwest Laboratory, respectively. If these charges were to be imposed by the AEC, this large increase over commercial burial charges would create a substantial monetary incentive for dilution of waste to reduce transuranic content below any AEC established limit to permit disposal in a licensed commercial burial ground. This would have the undesirable effect of generating more waste volume for commercial burial instead of the intended effect of restricting the burial of transuranics.

This example highlights the necessity for developing specific details prior to promulgation of such changes to 10 CFR Parts 20 and 150.

5. Without preparation by the AEC of more detailed information on total costs to the nuclear industry and on standards of compliance with the proposed new rules as well as benefits to be derived therefrom, it is not possible for the AEC to prepare a valid cost/benefit analysis in an environmental impact statement in accordance with applicable requirements. The draft environmental impact statement prepared by the AEC on Management of High Level and Transuranic Waste is deficient in this respect. This is another reason why action on this rule must be deferred.

Very truly yours,

Walter A. Zitlau President

WAZ/LB:nh

DOGREE BUINDER PR-20+150 (39 FR 32921) Transcranic Waste

VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND, VIRGINIA 23261

November 11, 1974

STANLEY RAGONE Senior Vice President



Serial No. 328

FR:DRH/PO&M:JTB:clw

Secretary of the Commission United States Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Dear Sir:

PROPOSED RULE MAKING ON TRANSURANIC WASTE DISPOSAL FEDERAL REGISTER, VOL. 39, NO. 178 (SEPTEMBER 12, 1974) PAGE 32921

The Virginia Electric and Power Company has the following comments concerning the proposed rule making on the disposal of transuranic wastes contained in the above referenced Federal Register notice.

The proposed rule making states that "Radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions." Based on the proposed change, the presence of a few leaking fuel rods in the reactor core make all wastes derived from the reactor primary system suspected "transuranic wastes." A leaking steam generator tube coupled with leaking fuel rods would make all wastes generated from the secondary system suspected "transuranic wastes" and subject to the provisions of the proposed rule. Both leaking steam generator tubes and leaking fuel rods are expected during normal operation of a power reactor, therefore, essentially all liquid and solid wastes generated at a nuclear reactor would be potential transuranic wastes.

We do not now have the capability of measuring the specified transuranic contamination level of 10 nanocuries per gram, and it is not clear that we can acquire this capability since (1) we understand that measurement to such levels is at or beyond the current state of the art and (2) analyses of certain wastes such as spent resins would greatly increase radiation exposure to operating personnel. Since the presence of transuranic elements could not be disproved, we can only infer that wastes such as the ones described above would have to be defined as transuranic wastes, hence falling under the proposed regulations.

Acknowledged by card 11-19-74, cra

VIRGINIA ELECTRIC AND POWER COMPANY TO

Secretary of the Commission

Page 2

It appears that this will needlessly require that large quantities of wastes which could safely be stored at commercial nuclear waste disposal sites at costs of less than \$2 per cubic foot be stored instead at AEC facilities at costs of \$30 to \$50 per cubic foot (as estimated by the AEC and Battelle Northwest respectively). The extra cost would be incurred because the wastes might contain transuranic elements.

We question the validity of assigning such a low concentration as the threshold for transuranic wastes. While 10 nanocuries/gram is convenient in that it can be related to naturally occurring radium concentrations, it is not a realistic value in its proposed application for radwaste generated at a nuclear power station. The reduction in risk of releasing transuranic elements to the environment resulting from such a threshold does not appear to be consistent with the considerable extra cost involved.

We believe that the same considerations enumerated above for nuclear power stations apply to spent fuel reprocessing and mixed oxide fabrication facilities. While we agree that wastes containing substantial quantities of transuranic elements should be given special treatment such as that specified in the proposed regulation, we do not believe that wastes suspected of not meeting such low contamination levels should be given the same treatment.

We are concerned that the proposed regulation will result in unnecessary increased costs of nuclear generation both from direct operating costs at the reactor site and from increased fuel fabrication and spent fuel reprocessing costs. These additional costs would ultimately be borne by the utility's customers.

We urge that implementation of this regulation be deferred until its safety significance and the total economic impact on the nuclear industry can be determined. As a minimum, the following actions must be taken before this can be done:

- The technical specifications for the solidified waste must be established commensurate with the objectives of the proposed regulation
- A cost-benefit analysis must be performed to compare the benefits derived versus the costs associated with the proposed regulation
- 3. A valid technical basis for the proposed 10 nanocurie/gm contamination level must be shown, including appropriate means of measuring this level in all possible sources of radwaste to which this regulation would apply

VIRGINIA ELECTRIC AND POWER COMPANY TO

Secretary of the Commission

Page 3

- 4. It has not been shown that the proposed regulation, in its present form, is required for the common defense and security of the nuclear industry, nor the health and safety of the general public. This must be demonstrated to establish a need for the proposed regulation.
- 5. As applied to the possible shipment of radwaste from operating nuclear power stations suspected of exceeding the 10 nanocuries per gram, it must be demonstrated that sufficient provisions are presently available to ship large quantities of radwaste to AEC burial grounds without undue hardship on the participating parties, if it is indeed established that 10 nanocuries per gram is the correct level.
- 6. It should be demonstrated that the present system of disposing of radwaste is not adequate especially considering the present solidification methods of waste and the low levels of activity involved.

In summary, it does not appear that a need or technical basis for the proposed change has been established. The impact of the proposed change has not been adequately evaluated. More detailed information on total costs to the nuclear industry and benefits to be derived from the implementation of the proposed rule must be determined before a valid cost-benefit analysis can be made. This analysis must be presented in an environmental impact statement in accordance with applicable requirements. The draft environmental impact statement prepared by the AEC on Management of Commercial High Level Transuranuim Contaminated Radioactive Waste, WASH 1539, does not contain the requisite analysis. Therefore, action on the proposed regulation must be deferred until the necessary actions are completed.

Very truly yours Stanley Ragone

JAMES E. PEAVY, M.D., M.P.H. COMMISSIONER OF HEALTH

FRATIS L. DUFF. M.D., Dr. P.H. DEPUTY COMMISSIONER

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AUSTIN, TEXAS 78756

BOARD OF HEAL TH

PROPOSED PULE PR-20150 (39 FR 32921)

HAMP TON C. ROBINSON, M.D., CHAIRMAN ROBERT D. MORETON, M.D., VICE-CHAIRMAN ROYCE E. WISENBAKER, M.S. ENG., SECRETARY N.L. BARKER JR., M.D. CHARLES MAX COLE, M.D. MICKIE G. HOLCOMB, D.O. JOHN M. SMITH JR., M.D. W. KENNETH THURMOND, D.D.S. JESS WAYNE WEET B. DH JESS WAYNE WEST R. PH

November 11, 1974

Acknowledged by card 11-19-74, era

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Chief, Public Proceedings Staff ATTN:

Dear Sir:

On September 18, 1974, we wrote comments to you regarding the proposed changes to 10 CFR 150 and 10 CFR 20 published in 39 FR 32921 concerning the disposal of transuranic waste. As a result of the Annual AEC -Agreement States Meeting and discussions among our staff, we feel that additional comments are necessary.

- The first of our comments is in regard to the inadequacy of I. the proposed regulations in curtailing the "improper" disposal of transuranic materials. While the proposed regulations would insure that most transuranics were transferred to the Commission for disposal, there are two catagories of transuranics that would still be exempt from this requirement. These are:
 - 1. Accelerator produced transuranics. Accelerator produced materials are not subject to the Commission's regulations.
 - 2. Products manufactured and distributed under a license issued pursuant to 10 CFR 32.26 to persons exempt from the Commission's regulations pursuant to 10 CFR 30.20. Americium 241 is commonly used in these gas and aerosol detectors.

Accelerator produced transuranics could be disposed of at commercial land burial sites since the Commission has no regulatory authority over them even if the Commission were to "reassert the Commission's authority in the Agreement States over the disposal of the transuranic waste by burial".



Texas State Department of Health

Transuranic Waste

Secretary of the Commission ATTN: Chief, Public Proceedings Staff Page Two November 11, 1974

The second category of material mentioned above presents an even more ludicrous situation regarding their disposal. If these items were presented to a commercial land burial licensee for burial, that licensee would be prohibited from accepting these items and burying them; however, the user could simply throw these items into the common trash and dispose of them.

The second of our comments relates to the concentration limit II. of 10 nanocuries per gram referenced in footnote #1 of the explanatory introduction to the proposed regulations. Since a 40% uranium ore body with daughter-product radium in equilibrium would have radium at a concentration in excess of 100 nanocuries per gram, the statement in the footnote that "10 nanocuries per gram represents the upper range of concentration of radium in the earth's crust" is obviously incorrect. Although we are not privy to the source of the Commission's information used in arriving at this limit, we feel that this statement should be reevaluated to determine a more accurate number if this concentration limit is to be used as a breakpoint between transuranic and non-transuranic contaminated materials.

Another objection to the 10 nanocurie per gram limits involves the practicality of this limit. Under this limit the material used for the leak test of a transuranic sealed source might well be classified as transuranic waste. For example, a piece of filter paper (typically weighing about 130 milligrams) could show removable contamination of 0.004 microcuries (the sealed source at this level would not be defined as leaking by the Commission's regulations) resulting in a concentration of approximately 30 nanocuries per gram and would therefore have to be shipped to the Commission. In view of the large number of sealed sources containing transuranics, particularly Americium 241, we feel this limit would place an unreasonable burden upon users of these sources and is not warranted to protect public health and safety.

We also abject to the absence of the concentration limit in the proposed regulation. If a concentration limit is to be used to differentiate between transuranic contaminated and non-transuranic contaminated waste, then this figure should be included in the regulation itself and not merely in the explanatory introduction to the proposed regulations. Secretary of the Commission ATTN: Chief, Public Proceedings Staff Page Three November 11, 1974

- III. Our third comment relates to the question of legal title to the material shipped to the Commission. In the U. S. Environmental Protection Agency radium disposal program, the Environmental Protection Agency has paid the individual from whom they received the radium a nominal amount of money to insure that the Environmental Protection Agency had legal title to the radium. The proposed regulations make no reference to any procedure for legally obtaining title to these transuranic materials. We do not feel that the Commission can by regulation force a person to surrender privately owned property to the Commission without providing that person compensation for the property.
 - IV. Our fourth comment relates to the charge that the Commission will levy upon persons sending transuranics to the Commission. We oppose the adoption of any regulations which have fees hidden away in them without reviewing the proposed fee schedule in terms of cost versus benefit. No proposed or estimated cost schedules have been published, but we have heard projections as high as \$25,000 per 55-gallon drum. Even if this figure is high by as much as two orders of magnitude, we feel that it is still too high. If the Commission's cost is over \$25.00 per drum, the Commission should bear the difference in cost between \$25.00 and the actual cost. We believe that the Commission should accept part of the responsibility for the waste that is generated by activities which the Commission has so vigorously promoted.
 - V. Recommendations:

In view of our above comments, we recommend that the Commission either:

- Withdraw the proposed regulations from consideration and allow the present methods of disposal of transuranics to continue unless there exists creditable evidence that the present method of burial is inadequate to protect public health and safety and the environment, or
- 2. Modify the proposed regulations so that they are applicable only to large users of transuranics (to be defined), or
- 3. Modify the proposed regulations so that they apply only to plutonium and plutonium contaminated wastes.

Secretary of the Commission ATTN: Chief, Public Proceedings Staff Page Four November 11, 1974

Thank you very much for allowing us to comment on these proposed regulations.

Sincerely,

-1. . ..

Martin C. Wukarch

Martin C. Wukasch, P.E., Director *Ha* Division of Occupational Health and Radiation Control

cc: Mr. G. Wayne Kerr
cc: Mr. Charles M. Hardin

PROPOSED RULE PR-20150 89 FR 32921) Transuranic Waste

President and Chief Executive Officer Detroit

2000 Second Avenue Detroit, Michigan 48226 (313) 237-8000

William G. Meese

Acknowledged by card 11-19-74, cr2

November 11, 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Gentlemen:

Proposed Rule Making on Transuranic Waste Disposal 39 Federal Register 32921 (September 12, 1974)

Although we support the position that the AEC eventually becomes the final custodian of "transuranium" contaminated wastes, it appears premature to invoke such a rule at this time, as it is presently envisioned, until certain vagaries associated with definitions, implementation and impact are clarified or resolved. This is especially true in light of (1) the cancellations and delays of light water reactors presently being experienced in the utility industry which drastically affect the projected accumulation of transuranic contaminated wastes and (2) the fact that the disposal of such wastes at commercially operated radwaste burial sites is not presently or is it expected to be a hazard to man or to the biosphere.

Specifically, our comments are directed to the following:

- Clarification of the definition of "transuranic." Each isotope 1. should be indicated here only on the basis of its specific radiotoxicity and chemical toxicity.
- 2. The exempt concentration level. Such a level should be specified for each isotope and should be based on radiotoxicity or chemical toxicity as well as capability of measurement.
- Measurement of concentration level. Where is such a measurement 3. to be made -- at the source or after waste collection and packaging? The proposed 10-nanocurie-per-gram level presents a problem when applied to any waste in a background of other beta/gamma emitters.
- 4. Cost benefit. What is the real impact of such a rule change on the nuclear industry? As proposed, the present rule change does not allow for a quantitative assessment.

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U.S. Atomic Energy Commission November 11, 1974 Page 2

In summary, considering the rapidly escalating costs of all consumer items and, in particular, those various materials and services essential to nuclear power generation, we believe it is imperative that a new cost conscious attitude be adopted in deciding on new regulatory requirements. Caution should be exercised in imposing new regulations without full and judicious consideration of their real necessity and cost.

Yours very truly,

William & meese
PROPROSED RULE PR- 20 + 150 (39 FR 32921) DOCIALER NUMBER ransurance Warde

BOGKETED

18 1974

DUKE POWER COMPANY

Power Building 422 South Church Street, Charlotte, N. C. 28201

A. C. THIES Senior Vice President Production and Transmission

November 11, 1974

Mr. Paul C. Bender Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Docketing and Service Section

Re: Proposed Amendments to 10CFR, Part 20 and Part 150

Acknowledged by card 11-19-74, ers

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P. O. Box 2178

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Dear Mr. Bender:

Pursuant to the Federal Register notice published September 12, 1974, Duke Power Company submits the following comments concerning the proposed amendment to 10CFR Part 20 and Part 150:

- (1) The Commission's forwards to the proposed amendments state that "radwaste from nuclear reactors would not be considered transuranic waste under normal operating conditions." In the event that the proposed regulation is adopted, the Commission should specify in the Code that radwaste from a nuclear reactor is normally exempt and specify under what operating conditions a nuclear reactor's radwaste would be considered potentially transuranic waste.
- (2) If during the operation of a nuclear reactor it becomes necessary to determine the presence of transuranic elements in radwaste, the Commission should provide guidance as to what constitutes an acceptable program, which should include the following considerations:
 - (a) A nuclear reactor operator should be afforded a simple mechanism, such as monitoring Reactor Coolant System activity, to conclude that no abnormal operating conditions exist that would result in classification of radwaste as being transuranic.
 - (b) If monitoring of actual radwaste is required, certain categories of waste should be exempted because of the difficulty in determining transuranic element concentrations and the low probability that significant concentrations would exist (e.g. compacted trash).

Page 2 Mr. Paul C. Bender

(c) If monitoring of waste is required, representative or random samples should be permitted as a means to determine the presence of transsuranic elements.

This type of guidance could be provided via issuance of a Regulatory Guide.

Very truly yours,

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A. C. Thies

ACT:gje

PROPOSED RULE PR-20+150 (39 FR 32921) Transmanic Weste

Nuclear Fuel Services, Inc. 6000 Executive Boulevard, Suite 600, Rockville, Maryland • 20852

A Subsidiary of Getty Oil Company

(301) 770-5510

November 11, 1974

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Gentlemen:

On September 12, 1974, the Atomic Energy Commission published in the Federal Register (Volume 39, No. 178) notice that it was considering amending its regulations in 10 C.F.R. Part 20 to prohibit the disposal by burial of transuranium elements in soil. Nuclear Fuel Services, Inc. has reviewed the proposed amendments and submits the comments and suggestions presented below.

1. Environmental Impact Statement

It appears that the USAEC intends to comply with the requirements of 10 C.F.R. 51.5(b)(6) by using WASH-1539, "Draft Environmental Statement, Management of Commercial High Level and Transuranium-Contaminated Radioactive Waste," September 1974, as the environmental impact statement for the proposed rule. Relative to the proposed amendments to 10 C.F.R. 20.302, 20.304, and 20.306, NFS' comments are as follows:

- The environmental considerations pertinent to the management of commercial transuranium-contaminated waste should be clearly separated from those pertinent to the management of commercial high level radioactive waste. WASH-1539 suffers from the intermeshing of these two subjects which are distinctly different and for which a distinction in regulations is appropriate.
- WASH-1539 does not adequately consider economic impact (cost) on existing radioactive waste burial operations that may lead to: a) significantly higher waste burial charges at commercial burial sites because of reduced volume; and/or b) the closings at the commercial burial sites with the resulting required transport and storage of waste far in excess of that estimated in Section 2.6.2 of WASH-1539.
- While the title of WASH-1539 is "Transuranic-contaminated" waste, discussions in the text (for example Appendix B "Rationale For the Value of Ten Nanocuries Per Gram) are actually only pertinent to plutonium-239. The environmental impact statement should clearly define the contamination whose potential environmental impact is being discussed.

Acknowledged by card 11-19-74, ers

Secretary of the Commission November 11, 1974 Page Two

> The statement of consideration for the proposed regulation states: "The Commission is also considering whether radionuclides other than those covered by this proposed regulation ..., because of potential hazard should also be earmarked for management by the AEC .." It should be clearly noted that WASH-1539 does not serve as the draft environmental impact statement for such considerations. It is difficult to understand how the impact statement can to the fullest extent practicable quantify the cost benefit analyses when major considerations are known not to be included. At the very minimum, the other radionuclides potentially subject to the proposed regulation should be identified.

- WASH-1539 does not adequately recognize the radiation exposure (environmental cost) that will result at the interim storage facility upon receipt of the transuranium waste. Sections 3.3.1.1 and 3.2.2 in discussing the radiation impact of transuranium waste management state "..the waste under discussion emit primarily non-penetrating radiation." and "most of the commercial transuranium waste would not require .. shielding." These statements ignore the experience of commercial burial grounds that the transuranics will probably be mixed with other nuclides omitting gamma radiation.
- WASH-1539 does not adequately recognize that highly radioactive equipment (large process vessels, filters, etc.) other than hulls will be sent to the interim storage site under the proposed regulation and that the preparation, transport, receipt and storage will involve incremental environmental costs (personnel exposure and radioactive releases) that could be avoided by burial at the respective reprocessing sites.
- The prohibition of the burial at commercial sites of wastes whose transuranic content exceeds 10 nCi/gm is apparently to be justified by a) that concentration is the upper range of natural radium concentrations in the earth and b) a comparison of the maximum permissible body burden (MPBB) of Pu-239 and Ra-226. NFS believes that representing the hazard of transuranics in the body by that of 239 Pu deserves further consideration. The relative hazard of the mixture of transuranics produced in greatest quantity, i.e., products of the LWR fuel cycle, appears to be an order of magnitude less than that for 239 Pu. Also, restriction of environmental concentrations on the basis of MPBB alone does not account for differences in environmental transport or differences in biologic incorporation which may result from differences in solubility, environmental mobility, and biological uptake fraction between the chemical species of radium and the transuranics anticipated in the environment. These factors are expected to significantly decrease the long-term impact of buried transuranics. Thus, it is recommended that any consideration of limiting the concentration of transuranics acceptable for burial should be based on a firmer quantitative relation to acceptable risk.

Secretary of the Commission November 11, 1974 Page Three

2. Proposed Regulation

The proposed regulations require significant clarification if they are to be readily understood and complied with.

- The term "contain" in the proposed 20.304 and 20.306 must be quantified. There is no mention of the 10nCi transuranics/per gram of waste in the proposed regulations; the 10nCi/gm appears only in the preceding statement of consideration. In the Environmental Impact Statement (WASH-1539) supporting the proposed regulation, the criteria discussed is 10nCi Pu-239/per gram of waste.
- The term "contaminated with..." in 20.306 must be clarified since "contamination" could be interpreted to mean a surface phenomena. The term if referring to a surface radioactivity level appears to be in conflict with Table 1 of Regulatory Guide 1.86, Termination of Operating Licenses for Nuclear Reactors.
- The phrase "as soon as practicable" in 20.306 should be deleted since a) it introduces subjectiveness into compliance with the regulation; b) at some facilities it may be practicable to immediately transfer the waste to the AEC and, it does not appear from the discussion on page 2.6-21 of WASH-1539, that the storage facility will be ready for initial operation before 1981 to 1983; c) the timing phrase "within 5 years of its generation" is consistent with the wording of Appendix F 10C.R.R.50 for high level waste and used in the statement of consideration for the proposed regulation.
- The statement of consideration for the proposed regulations imply requirements not contained in the proposed regulations. For example the consideration states that: "all wastes originating in the restricted areas of plutonium processing and fuel fabrication facilities, fuel reprocessing facilities (except high level wastes), and laboratories using transuranic elements in sealed sources should be considered transuranic wastes and handled as such." This statement presents significant difficulties because:
 - a) it seems that the statement of consideration presents a regulatory requirement not in the proposed or any other regulation,
 - b) even if it were in the proposed regulation, the term "should" seems to introduce an option rather than the directive term "shall",
 - c) applying the proposed regulation to the total "restricted area" (as defined in 10 C.F.R.20.3(a)(14) would apply it to wastes (an extreme example is grass clippings) that have no possibility of containing lonCi/gm transuranics.

Secretary of the Commission November 11, 1974 Page Four

- The apparent exemption of reactor radwaste from the regulation (the last sentence of the third paragraph of the statement of consideration) should be clarified. If an exemption is intended, it should be included in the regulations.
- To allow compliance with the proposed regulation's requirement that transuranium waste be transferred to the AEC, waste form requirements, packaging requirements, charges, destination of the waste, and when the AEC facility will be available to receive the material must be published at least by the time the proposed regulations are adopted.

Very truly yours, J.R. Clark, Manager

J.R. Clark, Manager Environmental Protection and Licensing

JRC/bv



PROPOSED RULE PR-20 × 150 (39 FR 32921) Transuranie Waste DOCKET NUMBER

BOSTON EDISON COMPANY EXECUTIVE OFFICES BOD BOYLSTON STREET BOSTON, MASSACHUSETTS 02199

FRANCIS M. STASZESKY EXECUTIVE VICE PRESIDENT

November 11, 1974

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Subject: PROPOSED RULE MAKING ON TRANSURANIC WASTE DISPOSAL 39 FEDERAL REGISTER 32921 (SEPTEMBER 12, 1974)

Gentlemen:

Boston Edison Company has reviewed the proposed rule making on transuranic disposal. We are disturbed with the potential impact of this ruling on the whole nuclear industry. The direct effect on operating utilities as contained in the proposed rulings needs to be clarified. "Radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions." The conditions to be considered "normal operating conditions." The conditions to be considered "normal operating conditions" are not well defined and could be interpreted as requiring the measurement of every waste shipment. Such a measurement would involve use of expensive equipment and very careful techniques along with some chance of significant radiation exposure. For example, in some of our routine radwaste shipments, there is a trace amount of neptunium 239. As the proposed rule is now worded, we would judge that these wastes would have to be measured for compliance. We are not aware of any evidence which justifies this additional cost which must be eventually borne by our customers.

The proposed ruling would undoubtedly have adverse effects on reprocessor and fabricator construction costs and schedules and operating costs and schedules. Their processes currently produce large volumes of materials which are either not contaminated or contaminated to a low level. Treating this quantity of waste as suggested by the proposed amendments would create an unreasonable additional cost for waste treatment and disposal. The additional costs would ultimately be passed on to the utility and affect the economics of the whole fuel cycle, thus increasing the cost of generating electricity.

We, therefore, strongly urge that this proposed rule making be reconsidered and that the Commission provide more detailed information on total costs to the nuclear industry so that it can make a valid cost/benefit analysis.

Sincerely yours,

Acknowledged by card 11-19-74, ere

P.O. BOX 3100 MIAMI, FLORIDA 33101



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V 18 1974 •

November 7, 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

Attention: Dockets and Service Section

PROROSED RULE - 20, 150 (39 FR 32921) Transuranic Waste

Re: Proposed Rule Making on Transuranian Waste Disposal (10 CFR Part 20)

A notice published in the Federal Register, Volume 39, No. 178 on September 12, 1974 presented proposed changes to standards for radiation protection. It is believed that these proposed changes would place a severe burden on the electrical utility industry and we join with the Atomic Industrial Forum Subcommittee on Radioactive Waste of the Nuclear Fuel Cycle Services Committee in opposition to these proposed rules for the following reasons:

- The proposed level for detection of transuranian waste 1. is believed to be too low for economic operations. In an AEC comment to the proposed standard, a level of ten nanocuries per gram has been established above which materials should be consigned to the AEC for storage. We have been informed that there is no practical way in which a 10 nanocurie per gram guideline could be routinely measured for commercial wastes which contain beta/gamma substances. There appears to be no known nondestructive methods either available or under development for external assay of this level of transuranian isotopes when the contents in a container are also beta/ gamma active. Lacking such nondestructive methods of evaluating waste collections, the proposed rule would be difficult and expensive for utilities to implement.
- 2. A sensitivity of 10 nanocuries per gram for measurement has been chosen as a guide since it represents the upper range of concentrations of radium in the earth's crust. This criteria is thought to be both arbitrary and unnecessary in view of the already stringent criteria for disposal in licensed burial grounds. It is believed that significantly higher quantities of transuranian elements could be disposed of in commercial burial

Acknowledged by card 11-19-74, ero

Secretary of the Commission Page 2 November 7, 1974

grounds without imposing a significant hazard to the public.

3. A cost benefit analysis has not been performed on the effects of this proposed rule making. In fact, such a study could not be performed since charges for acceptance of transuranic waste at designated commission sites have not been established. AEC officials have indicated that the charge would be at least \$30.00 per stored cubic foot and a recent paper published by Battelle Pacific Northwest Laboratory estimate these costs would be at least \$50.00 per stored cubic foot of waste. These charges are 20 to 25 times larger than the present charges for burial at commercial storage facilities. It is believed that this proposed rule places a severe burden on the electric power utility industry without proof that substantial improvement to the safety of the public will result.

Sincerely,

Ulwig Robert E. Uhrig

Vice President, Nuclear Affairs

REU/JRT/ec

DOCKER NUMBER PR-20+150 (39 FR 32921) Transmance Waste

ILLINDIS POWER COMPANY

500 SOUTH 27TH STREET, DECATUR, ILLINOIS 62525

November 8, 1974

OFFICE OF THE SECRETAR

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Secretary of the Commission United States Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Gentlemen:

Proposed Rule Making on Transuranic Waste Disposal Federal Register Vol. 39, No. 178 (September 12, 1974)

Illinois Power Company herewith submits comments on the proposed amendments to 10CFR20 and 10CFR150 of the Commission's Rules and Regulations regarding transuranic waste disposal as published in the subject Federal Register notice.

As a utility company with a planned nuclear power station, IPC will be a future user of radioactive waste disposal facilities. We believe the amendments to the regulations as proposed would have a direct, substantial and adverse impact on the operation and costs of our future nuclear generating stations.

The proposed rule changes and explanatory statement would require that all waste materials containing or contaminated with transuranium elements (atomic number greater than 92) be transported to and stored at AEC facilities. Estimates have indicated that such waste disposal practice would greatly increase the utility industry costs over commercial disposal and is not necessary for the protection of the public health and safety. Furthermore, techniques for measuring the radioactive concentration in waste materials at such low levels as the suggested guideline of 10 nanocuries of transuranic elements per gram are not available to the utility industry.

We suggest that the rule making as proposed not be adopted as it is unduly restrictive and has adverse, unreasonable cost

Acknowledged by card 11-19-74,000



Secretary of the Commission - 2 -

November 8, 1974

impact on the nation's nuclear power industry and is not necessary for the public health and safety.

Respectfully submitted,

ILLINOIS POWER COMPANY

W. C. Gerstner Vice President

Vansusance Waste

R. A. Lamley Vice President

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-1270

Consumers

S S X E T E

Office of the Secret Public Preseding

18 1974

November 11, 197

Secretary of the Commission Att: Dockets and Service Section US Atomic Energy Commission Washington, DC 20545

Gentlemen:

Consumers Power Company is taking this opportunity to comment on the proposed rule making on transuranic waste disposal as contained in 39 Federal Register 32921 (September 12, 1974).

The proposed amendment to 10 CFR 20.306 specifically states that, "Waste material containing or contaminated with transuranium elements (atomic number greater than 92) shall be solidified (if liquid), packaged and transferred to the Atomic Energy Commission as soon as practicable " This implies that no transuranic content other than zero is acceptable for burial at licensed burial facilities. In the Statements of Consideration for the proposed rule, the following is stated: "Radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions." A footnote to the Statements states further that, "Measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste. Waste which is suspect, but which has been measured and is not contaminated with more than 10 nanocuries per gram should be consigned to a licensed burial ground."

Consumers Power Company strongly believes that proposed amendments to 10 CFR 20 and 10 CFR 150 must include these clarifying statements. Specifically, an exception should be made for radwaste from nuclear power facilities for normal operating conditions. Further, the proposed amendments should include a statement that contamination to a level of no more than 10 nanocuries of transuranic elements per gram of waste is considered acceptable for burial at licensed burial grounds.

The proposed amendments as written would also require the waste originator to assume the responsibility for certifying the transuranic content of all waste generated by direct measurement. For

Acknowledged by card 11-19-74, ers

Secretary of the Commission November 11, 1974

operators of nuclear power facilities, this is generally not technically feasible. Other measurements can be made which would allow a conservative determination of the transuranic content of radwaste. We believe that such other calculational determinations should be allowed and suggest 10 CFR 20.306 be amended to read as follows:

Waste material containing or contaminated with transuranium elements (atomic number greater than 92) of concentration greater than 10 nanocuries of transuramium elements per gram of waste shall be solidified (if liquid), packaged and transferred to the Atomic Energy Commission as soon as practicable but, in any event, within five years after its generation. Measurements made to determine the transuranium element content of waste may include direct measurements or a suitable conservative determination by indirect measurement.

Without the clarifying language, we believe an essentially impossible and potentially costly responsibility is placed upon the originator of the waste.

Yours very truly,

R.D. Jamley

RWS/fw



Attention: Dockets and Service Section

RE: PROPOSED RULE MAKING ON TRANSURANIC WASTE DISPOSAL 39 FEDERAL REGISTER 32921 (SEPTEMBER 12, 1974)

Gentlemen:

The following comments are presented by The Cincinnati Gas & Electric Company concerning the proposed rule making on transuranic waste disposal contained in the above referenced Federal Register Notice:

- 1. As a nuclear utility, we are concerned about the adverse financial impact that the proposed rule change would have on ourselves as well as others in the utility industry. The impact would be felt both directly through increased costs for disposal of radwaste from our Wm. H. Zimmer Nuclear Power Station and indirectly through higher charges from fuel fabrication and reprocessing vendors who would pass-through to us their own increased radwaste disposal costs. We agree that waste with substantial quantities of transuranic elements should be placed under federal control to insure maximum protection of the environment, but we disagree that this requires above-ground interim federal storage of all transuranic-bearing waste as seems to be implied in the proposed rule. We believe it is preferable to continue to handle most of the waste potentially encompassed by the proposed rule on a licensed, commercial basis so that the economies of such operations can be retained while assuring maximum safety and security through government regulation and on-site continuous control.
- The conditions under which radwaste from nuclear reactors would be suspect and hence subject to measurement and certification of the transuranic content are not specified in the proposed amendments. It is also implied that suspect waste, which cannot or has not been

To: Secretary of the Commission

27 44

November 8, 1974

Re: Proposed Rule Making on Transuranic Waste Disposal 39 Federal Register 32921 (September 12, 1974) Page #2

measured, must be consigned to the AEC whether actively contaminated with transuranics or not. The proposed change could thus be interpreted as requiring the measurement of every waste shipment and in the long run of directing more waste to the AEC.

- 3. We believe that using the maximum naturally occurring radioactivity level of radium in the earth's crust as the norm for establishing a waste concentration limit of 10 nanocuries of transuranics per gram is rather arbitrary. It is also an unrealistic requirement since this concentration limit is less than the minimum activity level which is technically practical to measure in the presence of substantial beta/gamma activity.
- 4. The proposed rule lacks definite statements on technical specifications and charges for the solidified wastes assigned to the AEC. This precludes any evaluation of the resultant economic impact on the nuclear industry. Inasmuch as this contemplated rule change could have a significant economic impact, we believe the proposed rule making should be deferred until such information is available for consideration as part of the rule making action. Further details are also required in the proposed amendments in order to prevent mere dilution of wastes to reduce their transuranic content below any AEC established limits, thus circumventing the intent of restricting the burial of transuranics.
- 5. The draft environmental impact statement prepared by the AEC on Management of High Level and Transuranic Waste is deficient in the areas of the total cost impact of this proposed rule and also in the standards of compliance to be applied to the new rules. These deficiencies invalidate, in our opinion, the cost/benefit analysis of this environmental impact statement and provide another reason why action on this proposed rule change should be deferred.

We trust the above comments will be considered before reaching a final decision on the proposed rule change.

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

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W. H. Dickhoner

WHD:dew

Carl L. Newman

DOCKET NUMBER PR. Or 150 (39 FR 32921) Transwanic Waste

Consolidated Edison Company of New York, Inc. 4 Irving Place, New York, N. Y. 10003 Telephone (212) 460-5133

November 8, 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545



Attention: Dockets and Service Section

Gentlemen:

Consolidated Edison Company of New York, Inc.("Con Edison") respectfully submits the following comments on the proposed amendment of AEC regulations 10 CFR Part 20, prohibiting disposal of transuranium wastes by burial in soil, published in the <u>Federal Register</u>, Vol. 39, pages 32921-3, September 12, 1974.

1. The proposed regulations do not contain a specific definition of transuranic wastes, but refer, in §20.306, to "[w]aste material containing or contaminated with transuranium elements (atomic number greater than 92) . . ." This section then goes on to require solidification of such waste.

Con Edison believes that the clarity of the regulations would be enhanced if this term were defined in §20.3. A suggested definition is set forth at the end of this letter. Section 20.306 would then read:

> "§20.306 <u>Transuranic waste</u> shall be solidified (if liquid), packaged, and transferred to the Atomic Energy Commission as soon as practical, but, in any event, within five years after its generation."

Once "transuranic waste" has been defined, proposed §20.302(d) and §20.304(a) should be amended to refer to "transuranic wastes" rather than "transuranium elements (atomic number greater than 92)."

Acknewledged by eard 11-12-74, cra

Similarly §150.15(a)(7) should read:

"(7) The disposal of transuranic wastes, as defined in 10 CFR §20.3, by burial."

2. The proposed amendments §20.302(d), §20.304(a) and §20.306 would prohibit burial of transuranic waste at any licensed burial ground and require the transfer of such waste to the AEC. No exemptions of a minimum quantity are stated in the regulations. Proposed amendment to §150.15(7) gives no exemption to any persons for disposal of transuranic elements by burial.

However, in the introductory remarks on pages 32921 and 32923, the AEC states that "radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions." The footnotes appearing on the same pages discuss sensitivity of measurements to a level as low as 10 nanocuries of transuranic element activity per gram of waste. It appears to be the intent of AEC to permit burial of wastes containing transuranium elements in licensed burial grounds if the activity of such wastes is below the 10nCi/gm level.

It is not clear that these remarks and interpretations of AEC are consistent with the proposed amendments. If it is the Commission's interpretation that a quantity exemption and an exemption for nuclear reactor wastes are intended, such exemptions should be clearly stated in the proposed amended sections.

Con Edison, therefore, suggests that the definition of "transuranic wastes" specifically include an exemption for nuclear reactor wastes and, as discussed below, a minimum activity limit.

3. In the footnotes appearing in pages 32921 and 32923, the 10nCi activity limit is justified based on radium levels found in soil and the "comparable" radiotoxicity of transuranic isotopes and radium. This justification is not entirely correct since more than 95% of the transuranic element radioactivity in spent nuclear fuel has a half-life of 13 years or less, whereas radium has a 1600 year half-life. This difference in half-life alone substantially reduces the radiotoxicity of the transuranics. Furthermore, radium has several short-lived daughters which results in a substantially enhanced radiotoxicity, while the transuranic elements present in nuclear fuel all have long-lived daughters which do not increase their toxicity.

Therefore, Con Edison suggests that the definition of transuranic waste cover only those wastes with toxicity in excess of that of naturally occurring radium in soil. We propose the following wording:

> " §20.3(a)(18) 'Transuranic Wastes' means any radioactive wastes, other than wastes derived from the radwaste system of a nuclear reactor under normal operating conditions, with an activity in excess of 10 nanocuries per gram attributable to nuclides with atomic numbers greater than 92 and half-lives greater than 15 years."

Con Edison appreciates this opportunity to present its views on this matter. We hope they will prove helpful to the AEC.

Very truly yours,

bail L. Neuman

Carl L. Newman Vice President

/nm



PROPOSED RULE PR-20\$ 150 (39 FR 32921)

Acknewledges by sars 11-12-74,00

Southern California Edison Company

P. O. BOX 800 2244 WALNUT GROVE AVENUE ROSEMEAD, CALIFORNIA 91770

November 8, 1974

TELEPHONE 213-572-2292

VICE PRESIDENT

Dear Sir:

Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

> Subject: Proposed Amendments to 10 CFR Part 20.302(d) and 10 CFR Part 150.15(a7)

The proposed Rulemaking published in the September 12 Federal Register is clearly intended to regulate transuranic wastes produced at the nuclear fuel reprocessing plant. We are concerned that the exemption of waste produced at the nuclear reactor is insufficiently clear such that in the future, literal interpretation of the wording of the regulation shall force all wastes from reactors to be sent to government burial ground.

We suggest three modifications:

(1) The statement that waste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions should be moved from the foreword to the Regulation. This will assure that this intent is not lost or questioned in future years.

(2) An alternative criterion should be provided to determine whether reactor wastes are contaminated; for example, "If the nuclear reactor fuel elements are sound, as indicated by coolant activity monitoring for alpha activity, then only normal monitoring as required by other Regulations need be done to determine container surface contamination and radiation level, and content radioactivity."

While the prescription that "suspect waste" be monitored is sound, in practice it may be difficult to certify that the limit of 10 nanocuries per gram is met. How can one prove, e.g., that a barrel of Kleenex, shoecovers, insulation, metal scraps, etc., contains less than 10 nanocuries per gram of gross alpha activity, let alone transuranics? Secretary of the Commission November 8, 1974 Page 2



The objective of allowing the burial on non-government land of material containing less than natural background seems acceptable. However, some allowance should be made for both gross-alpha detection and for alpha activity from material other than transuranics.

I hope that you will be able to take these suggestions into account.

Very truly yours,

Amory

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CHOROSED RULE R-20 + 150 (39 FR 32921) Transuranie Waste

November 8, 1974

Acknowledged by eard 11.12.74, cm

Secretary of the Commission United States Atomic Energy Commission Washington, D.C. 20545 Attention: Dockets and Service Section



Re: Proposed Rule Making Transuranic Wastes Disposal

Gentlemen:

The following comments are presented by Commonwealth Edison Company concerning the proposed rule making on transuranic waste disposal contained in 39 Federal Register 32921 (September 12, 1974).

Commonwealth Edison Company generally agrees with the comments submitted by the Atomic Industrial Forum on October 25, 1974 and the Nuclear Engineering Company, Inc., on October 31, 1974. It is Commonwealth Edison Company's position that the proposed regulations should be amended to specifically exclude as transuranic waste any solid, liquid or gaseous waste produced by light water reactors under normal operating conditions. This proposed change would carry out the position expressed in the introductory remarks to the proposed change.

Commonwealth Edison Company would further note that in the introductory material, the Commission has indicated that radwaste is not generally considered transuranic waste. However, we believe the term radwaste has historically been considered to include only liquid waste. Therefore, in order to preclude any problems of interpretation, the exclusion we propose should specifically cover all forms of radioactive waste produced by light water reactors rather than referring to radwaste.

Sincerely yours,

H. H. Nexon Senior Vice-President

PROPOSED RULE PR-20, 15 39 FR 32921) Transurmic Waste

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SACRAMENTO MUNICIPAL UTILITY DISTRICT D 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211



November 7, 1974

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Proposed Rule Making on Transuranic Waste Disposal 39 Federal Register 32921 (September 12, 1974)

Gentlemen:

The Sacramento Municipal Utility District has reviewed the proposed Rule Making on Transuranic Waste Disposal and wishes to offer the following comments:

> 1. If these proposed rules are adopted, it would be necessary for the utility to assume the responsibility for measuring and certifying the transuranic content of all waste generated. It is our understanding that the measurements necessary to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste are difficult, expensive, and would involve significant radiation exposure to our operating personnel.

In the absence of a clear definition of transuranic wastes, a definitive statement on proposed changes to Technical Specifications, and a Regulatory Guide to define acceptable methods for measuring transuranic content, it is difficult to assess the impact of the proposed rule change on plant operations.

2. Since available estimates indicate that the expected storage charge per cubic foot of transuranic contaminated waste will be significantly higher than that charged for normal commercial disposal, implementation of these rules could provide the incentive for dilution of wastes to reduce the transuranic content to the point which would permit disposal at licensed

Acknewiedged by card 11-12-74,000

November 7, 1974

commercial burial grounds. Encouragement of such action would seem to be contrary to the intent of the proposed rule change.

3. The establishment of a limit of 10 nanocuries of transuranic elements per gram of waste appears to be arbitrary as no cost/benefit analysis is offered in support of this limit.

For these reasons, it is suggested that further action on this rule should be deferred.

Sincerely yours,

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J. J. Mattimoe Assistant General Manager and Chief Engineer

ERORGERED RULE PR-20, 150 (39 FR 32921) Transuranic Wasts



Nebraska Public Power District

GENERAL OFFICE P.O. BOX 499, COLUMBUS, NEBRASKA 68601 TELEPHONE (402) 564-8561



November 8, 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D. C. 20545

Attn: Dockets and Service Section

Gentlemen:

The following comments are presented by Nebraska Public Power District concerning the Proposed Rule Making on Transuranic Waste Disposal which was published in the Federal Register, Vol. 39, No. 178 (pages 32921 through 32923), September 12, 1974.

- 1. As a Licensee and operator of a nuclear power facility and as an organization which is vitally interested in maintaining proper protection of the public health and safety, we agree that waste which contains substantial quantities of plutonium should be placed under such additional control as is required to obtain maximum practicable protection of the environment. However, the proposed amendments to 10 CFR Parts 20 and 150 do not contain an adequate technical definition of "transuranic waste," as to quantity or isotopic composition, to insure uniform and realistic application of the proposed regulation.
- 2. As presently worded, the proposed regulation might be interpreted to require the waste originator to assume the responsibility for measuring and certifying the transuranic content of all waste generated.

The statements of consideration for the proposed rules state: "Radwaste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions." --and---"Measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste. Waste that is suspect, but which has been measured and is not contaminated with more than 10 nanocuries per gram should be consigned to a licensed burial ground."

Further clarifying language should be added to define the basis for declairing such wastes as "suspect" to avoid an interpretation that would require the measurement of every waste shipment.

Acknowledged by card 11-12-74, ero

Secretary of the Commission November 8, 1974 Page Two

- 3. For wastes from nuclear power reactors which contain beta-gamma emitting nuclides, there is no practical way by which a 10 nanocurie per gram "guideline" can be measured after waste collection and packaging. Also, there is no practical way by which such a concentration can be measured routinely in batches of wastes containing relatively much greater concentrations of beta/gamma emitting nuclides such as are normally present in spent resin wastes. Attempts at routine use of such measurements, in addition to being not practicable, would result in an excessive increase in man-rem exposure and manpower requirements for station personnel.
- 4. In the absence of definite technical specifications and charges for wastes assigned to the AEC, there is no way to assess the requirements for compliance or the impact on facility operation if the rules were to be adopted. However various estimates have been made which indicate that the rule may impose far greater costs than can be justified by the benefits achieved by the 10 nanocurie per gram limit which has been proposed. This proposed rule making should be deferred until an adequate cost-benefit evaluation, including alternate considerations, has been made.

Sincerely yours,

L. John Cooper

Environmental Manager

LJC:dkb

PROPOSED RULE PR-20 150 (39 FR 32921) Transuranic Waste



P. O. BOX 270 HARTFORD, CONNECTICUT 06101 203-666-6911

November 8, 1974

DONALD C. SWITZER EXECUTIVE VICE-PRESIDENT

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Docketing and Service Section



In the September 12, 1974 issue of the FEDERAL REGISTER, notice was given that the Atomic Energy Commission (AEC) was considering amendments to its regulations and, in particular, 10CFR20. The proposed amendments would require that all transuranic waste be transferred from the licensee to the AEC for treatment and subsequent disposal by burial in the soil.

Northeast Utilities believes that the proposed regulations are too restrictive in requiring that <u>all</u> transuranic waste from <u>all</u> generators be transferred to the AEC. Strict interpretation of the proposed amendment leads to the conclusion that nuclear power plant personnel must first determine whether or not there are quantities of transuranic waste in concentrations greater than 10 nanocuries per gram. This determination must be made on "suspect" wastes from ion exchange resins, filters, and waste streams. Measurement of the quantities of transuranic wastes in all suspect wastes to determine if concentrations exceed 10 nanocuries per gram at a nuclear power plant site would be an extremely detailed and expensive procedure. In addition, it would necessitate additional equipment, manpower and training to perform. Further, within the concept of "as low as practicable", and Regulatory Guide 8.8, it may lead to unnecessary radiation exposure of the personnel who are involved in the sampling and measurement procedures.

While Northeast Utilities believes that disposal of large quantities of transuranic waste under AEC management is a sound approach, governmental control of any low-level nuclear power plant produced transuranic waste is not deemed feasible from either a safety or economic aspect. A possible solution to this situation is perhaps to specify classes of waste generators so that more definitive and specific rules may be developed within a particular class.

It is also felt that the proposal of these amendments, which have the effect of imposing fees on the generators of waste for federal waste management, without a corresponding schedule of fees is unreasonable. The lack of cost information makes it extremely difficult for a utility to assess the impact of such a regulation on plant operation. It is therefore recommended that a fee schedule be developed. At that <u>point</u>, it would seem appropriate to publish concurrently the proposed fee schedule and the proposed amendments for public comment.

THE CONNECTICUT LIGHT AND POWER COMPANY THE HARTFORD ELECTRIC LIGHT COMPANY WESTERN MASSACHUSETTS ELECTRIC COMPANY HOLYOKE WATER POWER COMPANY NORTHEAST UTILITIES SERVICE COMPANY

Acknowledged by card 11- 12-74, drs



In conclusion, Northeast Utilities opposes adoption of the proposed amendments to 10CFR20 at this time until additional consideration has been given to the impact of such amendments on the nuclear power plant design and operations.

Very truly yours,

NORTHEAST UTILITIES

D.

C. Switzer, Executive Vice President

By W. F. Fee, Vice President

DCS:BI:jjm



U.S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Re: Proposed Rule Making on Transuranic Waste Disposal-39FR32921

Gentlemen:

Duquesne Light Company offers the following comment on the above-referenced proposed rule making:

The statement which says "Measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste," represents a practical impossibility on a commercial scale if a primary measurement of radwaste is contemplated. Instrumentation is not available which can assay packaged radwaste at this sensitivity. Sampling of waste prior to packaging to determine the existence of transuranic elements at these minuscule levels requires substantial laboratory sample preparation which will result in significant increases in radiation exposure to our analysts and prohibitive costs.

Secondary methods of determining transuranic element content (ie. based upon coolant chemistry, decontamination factors, and filter factors or by inferring transuranic element levels from the presence of other associated and more readily measurable isotopes) lead to increased uncertainties in the measurement process. Such methods are only applicable to relatively homogeneous material and therefore excludes a large portion of the radwaste generated in nuclear power plants.

The effect of this requirement will either cause significantly increased shipments to AEC Repositories with commensurately increased costs or it will cause the plant operator to dilute the waste to be shipped to commercial repositories to the extent that the letter of the standards are met.

11-12.74. end loknowledged by sard

Sincerely.



ARKANSAS POWER & LIGHT COMPANY 9TH & LOUISIANA STREETS . LITTLE ROCK, ARKANSAS 72203 . (501) 372-4311



Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C.

Attention: Dockets and Service Section

Re: Disposal; 39 Federal Register 32921 (September 12, 1974)

Dear Sir:

Arkansas Power & Light Company is a public utility which serves a major portion of the State of Arkansas. It has under construction two nuclear generating stations, one of which is presently in the final stages of testing before commercial operation. We have reviewed the proposed regulation relating to transuranic waste disposal which was published in the Federal Register cited above. We feel that this regulation as proposed would adversely affect us, and we desire to submit the comments set out below.

1. The proposed changes will result in the shipment of most nuclear power plant waste material to the AEC for controlled waste storage. The effect of these changes will be:

> a. Large increase in waste disposal costs for normal, low-level solidified waste;

The elimination or curtailment of the b. commercial waste disposal industry;

Tremendously expanded requirements for C. AEC controlled storage of wastes;

Acknowledged by eard 11-12-74, ers



Secretary of the Commission U. S. Atomic Energy Commission November 8, 1974 Page 2

> d. Unnecessarily tight control of solidified wastes containing low levels of transuranium elements that can be satisfactorily stored at commercial locations.

2. The Statements of Consideration for the proposed rules discusses a 10 nanocuries of transuranic elements per gram of waste cutoff limit, above which would require shipment to the AEC for storage and subsequent burial. There are no practical means to identify this cutoff level at a nuclear power plant for many forms of high level waste such as filters, resins and concentrator bottoms. This would result in a utility being forced to ship all its wastes to the AEC to ensure that it was not commercially burying waste with a larger concentration than 10 nanocuries per gram.

3. We currently have commercial contracts for shipment and disposal of plant radioactive wastes with specific packaging and shipping requirements as well as in-plant equipment designs to accommodate contracted methods of shipment. The proposed rules do not specify any requirements as to form of shipments, activities, dimensions or charges associated with waste disposal to the AEC. The proposed rules would require us to terminate our commercial contract and store waste at our site until we could obtain the packaging and shipping requirements from the AEC.

We believe that the proposed rules would unnecessarily increase nuclear power plant waste disposal costs, reduce incentives for the commercial waste handling and disposal industry, and result in unmanageable quantities of radioactive waste with low levels of transuranic elements at the future AEC burial grounds. Therefore, we request that these rules be modified to allow shipment of all generating plant wastes to commercial burial sites or that you defer establishing new rules until the overall impact of the proposed rules can be determined.

> Very truly yours, ARKANSAS POWER & LIGHT COMPANY

By amisiffordural

Director, Power Production

GENERAL ATOMIC COMPANY P.O. BOX 81608 SAN DIEGO, CALIFORNIA 92138 (714) 453-1000

November 8, 1974

PROPOSED PR-20, 150 (39 FR 32921)

Transuranic Waste

Secretary of the Commission United States Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Subject: Proposed Rulemaking Transuranic Waste Disposal

Dear Sir:



These comments are in response to the September 12, 1974, notice of proposed amendments of 10 CFR Part 70, concerning transuranic (TU) wastes.

RAL ATOMI

Comment 1: The AEC plans to levy fees for its handling and management of transuranic wastes. In our view, estimated costs of that service together with tentative fee schedules for the various activity levels and material forms should be provided to make possible a meaningful participation in the rulemaking. One feasible method would be to make such information part of the Commission's cost-benefit analysis in its draft and final environmental statements, as would be expected of a licensee proposing to engage in similar activity. That could also help forestall the kind of problems AEC has experienced (Rulemaking Petition PRM-170-1) under 31 USCA 483a, and the decisions in <u>National Cable Television Ass'n, Inc.</u> vs. U.S. and <u>Federal Power Commission vs. New England Power Co.</u> following its most recent increase of license fees.

Comment 2: The explanation of the proposal introduces the transuranic element activity per gram of waste as a factor in determining what must be destined for AEC permanent management. However, the regulation amendments presented do not stipulate any such specific activity level. Consequently, to make the proposed rule truly usable and reliable in practical operation, a precise value or table of values for each transuranic element activity should be included in the contemplated regulations themselves.

Comment 3: The footnote included in the September 12 announcement indicates the Commission may be persuaded that the coincidence of



Secretary of the Commission - 2

the upper range of radium concentration in the earth's crust and its implied criterion of 10 nanocuries of TU elemental origin per gram of waste is significant. If that consideration is one which weighs heavily, it should be recalled that present regulations allow burial in soil of concentrations up to 1,000 times Appendix C, and that licensed burial activities are so few in number and so easily spaced through licensing precautions that it is possible to preclude approaching the earth's crust radium concentration in any reasonable geographic area without totally abolishing the present practices. We would have no disagreement with the thought that concentrations above 1,000 times Appendix C are reasonably candidates for AEC-managed final disposal.

Comment 4: The implied quantitative limit of 10 nanocuries per gram of waste is extremely low, and appears to be based only upon the fact that it approximates radium concentrations in the earth's surfaces. Such a level of radioactivity, however, is typically undetectable with survey-type instrumentation available outside analytical laboratories, so that extensive sampling and analysis of wastes would be required to determine the applicability of the proposed disposal regulations, assuming the September 12 footnote is intended to establish the threshold for their attachment. The proposed regulation would require AEC disposal, unless material is proved to contain less than 10 nanocuries of activity pergram, imposing what we anticipate will be a needlessly excessive burden upon AEC because licensees may prefer to deliver questioned material rather than to analyze it. The eventual result could be disposal facilities of such scope, containing material of such bulk, as will militate against the meticulous care that can and should be given well-chosen smaller quantities of really significant waste.

Comment 5: The proposed concentration limit, aggregating the TU elements as though they were all equally significant, tends in two ways to defeat what seem to be the worthy goals of objective separation of those wastes from other types and reduction of the volume of transuranic wastes for most efficient control. First, known or suspected small quantities may be diluted in larger weight samples. Secondly, licensees probably should not be deprived of all incentive to retain the transuranics in their most concentrated form consistent with their waste disposition. Both goals could be served by raising the concentrations for AEC-designated wastes to intensities commensurate with field or process instruments which bear some reasonable relation to a level of concern for normal individuals.

Comment 6: Californium-252, berkelium-249, neptunium-239, and curium-242 have relatively short half-lives compared to the expected mean

Secretary of the Commission - 3

November 8, 1974

failure times of storage containers that will be exposed to normal environmental conditions, but their specific activities are high enough so that the proposed 10-nanocurie/gram limit would require AEC disposal whenever their isotope concentration is on the order of one-tenth part per billion. We believe they should not automatically be given such draconian treatment merely because they are transuranic.

Comment 7: We question the propriety of stating, as does the September 12 announcement, that "all wastes originating in restricted areas of plutonium processing and fuel fabrication facilities, fuel reprocessing facilities . . . and laboratories using transuranium elements not in sealed sources should be considered transuranic waste and handled as such, " even if modified by the implied standard of 10 nanocuries per gram. It borders upon a conclusive presumption that material is offensive merely because of its origin, and there is simply too much varied material coming out of fuel fabrication, plutonium processing, fuel reprocessing, and laboratory facilities to permit a reasonable opinion that it is all transuranically contaminated. Even if the conclusion were sound, and assuming that the 10 nanocuries per gram becomes a regulatorily effective qualifying standard, we inquire whether the latter should be in terms of alpha activity only and whether the sources should include (or are intended to include) daughter elements below the transuranics.

In summary, we believe it probable that proceeding upon a broad generalization which assumes uniformly high hazards for all isotopes and elements above Atomic No. 92 is unfortunate. We also believe various methods of disposal should be used commensurate with activity levels, which should be based upon and consistent with sensitivities of standardized survey techniques. The various methods of disposal could include continuation of currently licensed surface burial for lower level wastes.

Very truly yours,

James P. Hogan Attorney

JPH:gjc

PHOROSED RULE PR-20, 150 (39 FR 32921) Transaranic Was GENERAL

GENERAL ELECTRIC COMPANY, 175 CURTNER AVENUE, SAN JOSE, CALIFORNIA 95125 Mail Code ______ Phone (408) 297-3000, TWX NO. 910-338-0116

November 6, 1974

Acknowledged by card 11-12-74, ora

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Dear Sir:

The Nuclear Energy Division of the General Electric Company has reviewed the proposed amendments of 10 CFR Parts 20 and 150, published in the Federal Register on September 12, 1974 (39 FR 32921, 32922), which would prohibit disposal of transuranic waste by burial in soil.

General Electric does not concur that the proposal should be adopted. It is unsupported either by a cost-benefit analysis or by hard technical evidence of a clear and imminent danger to the public health and safety. Precipitous adoption, moreover, could result in immediate and unwarranted interruption of currently approved waste management practices with insufficient time for development and demonstration of alternate plans. These considerations are further discussed below.

A. Technical Aspects

The Commission states that the proposed amendments are necessary because, among other things, of the long half-life and high specific radiotoxicity of the transuranium elements (atomic number greater than 92). Transuranium radionuclides, however, include neptunium-239 (half-life of 2.35 days), berkellium-250 (half-life of 3.2 hours), and others of relatively short half-lives. Transuranium radionuclides also include plutonium-239 (half-life of 24,360 years). Plutonium is the element which apparently necessitates the proposed amendments because it is the preponderant constituent of



NUCLEAR ENERGY

DIVISION

GENERAL 🍪 ELECTRIC

Secretary of the Commission USAEC

November 6, 1974

wastes which have been (or are likely to be) buried. The radiotoxicity of neptunium-239 and berkellium-250 is approximately ten thousand times less than that of plutonium-239, as evidenced by the maximum permissible concentrations set forth in Table I, Column 1 of Appendix B to 10 CFR 20; namely, Np-239 (I) - 7 x 10⁻⁷ microcuries/ml, Bk-250 (I) - 1 x 10⁻⁶ microcuries/ml versus Pu-239 (I) - 4 x 10⁻¹¹ microcuries/ml.

Because of the relatively short half-lives and low radiotoxicity of Bk-250 and Np-239, it is not necessary for protection of public health and safety to prohibit these radionuclides from disposal by burial in the soil. Rather, only those specific radionuclides of concern should be included in such a list. The radionuclide of most concern appears to be plutonium-239, because of its 24,360 year half-life and high radiotoxicity. In addition, the quantity of plutonium-239 available for disposal by burial is predicted to increase significantly in the future. The Commission has not demonstrated that burial of plutonium in commercial licensed burial grounds is necessarily a real and unacceptable hazard to the public.

Proposed paragraphs 20.302 (d), 20.304, 20.306 and 150.15 (a) (7) together appear to prohibit burial of all transuranic waste. Prohibition of burial of all such waste is inconsistent with the Commission's advice in Note 1 to the introduction in the Federal Register which precedes the proposed amendments that, "measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive to detect contamination levels as low as 10 nCi of transuranic elements per gram of waste. Waste that is suspect, but which has been measured and is not contaminated with more than 10 nCi per gram, should be consigned to a licensed burial ground. ... " This advice clearly states that waste contaminated at levels equal to, or less than, 10 nCi per gram may be buried at a licensed burial ground. Therefore, the Commission has established a lower limit for transuranic waste (10 nCi per gram), operations below which, we assume, the Commission believes will maintain satisfactory protection of the public.

GENERAL 🍪 ELECTRIC

Secretary of the Commission USAEC

November 6, 1974

The Commission states that the numerical value for the concentration limit of 10 nCi per gram is chosen since that value represents the upper range of concentrations of radium in the earth's crust and that in terms of long half-life and radiotoxicity, transuranium elements are comparable to radium. However, as was stated above, in the comparison of Bk-250 and Np-239 with Pu-239, not <u>all</u> transuranium radionuclides have either long halflives or particularly high radiotoxicities. Comparison of concentrations of such short-lived radionuclides with concentrations of radium in the earth's crust, with respect to human hazard, is not technically sound.

In addition, the Commission does not demonstrate that the concentration of radium at 10 nCi per gram is in any way related to an effect on human health. The concentrations of radium in the earth's crust may not be directly or indirectly related to specific and injurious effects on humans. Until such relationship is established by direct measurement, such a comparison should not be used by the Commission as a basis for establishing a limit for burial of radionuclides. The Commission should prohibit burial of radionuclides only in those concentrations which can be scientifically demonstrated to translocate from licensed burial sites to man in sufficient quantities as to cause measurable and unacceptable injury to humans. Prohibition of burial of concentrations lower than those which are demonstrated to cause injury to humans is not warranted and not in the best interest of public health and safety.

B. Cost-Benefit Relationships

As part of the discussion which precedes any proposed amendment which involves cost to licensees, such as the proposed amendments, the Commission should include in the Federal Register a cost evaluation of the proposed requirements and an analysis of the cost impact on licensees. Such analysis and impact are particularly necessary at the present time because of the current inflationary economy. They are also consistent with the objectives stated by President Ford
GENERAL 🍪 ELECTRIC

Secretary of the Commission USAEC

November 6, 1974

in his October 8, 1974, speech on the economy in which he announced, "a joint effort by the Congress, the Executive Branch and the private sector to identify and eliminate ... Federal Regulations that increase costs to the consumer without any good reason in today's economic climate." Any increase in cost to licensees, because of new regulatory requirements, should be carefully evaluated to assure that the real benefits outweigh the real costs. Cost impact analysis is provided by other regulatory agencies, such as the Environmental Protection Agency (see, for example, 39 FR 38208) in the introduction accompanying rule changes.

In the cost analysis, the Commission should include the cost of measuring contamination on waste, as well as cost of treating potential waste to remove unwanted contamination. Both capital and operating costs should be considered. Cost evaluations should be based on commercially available equipment and established practical techniques and procedures. If an instrument or piece of equipment is not commercially available, the Commission should obtain reasonable quotations from commercial suppliers based on prototype designs which have been demonstrated to perform to needed and detailed specifications.

C. Impact of Immediate Implementation

Proposed paragraph 20.302 (d) would revoke any license or license amendment authorizing disposal of transuranium elements by burial effective on the date of the regulation amendment. Time is not provided for licensees to design, obtain, install, and test equipment for processing potential waste to remove transuranium elements or for equipment to measure transuranium elements on or in waste. Since the Commission has not demonstrated that transuranium elements disposed of by burial at licensed facilities have or are likely to affect human health in any significant manner, and because the quantity of such material, which is likely to be buried at a licensed facility, will remain relatively small in the next five to ten years, the Commission should provide a reasonably long time period after the regulations are published in which licensees may establish their capability for compliance with the regulation. A

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Secretary of the Commission USAEC

November 6, 1974

period of five years is appropriate because of the very long lead times required to obtain funds for equipment, installation and testing of equipment, and also because the cost of such equipment must be tested in Marketing and Sales operations, some of which are planned as long as five years in advance.

In light of the above comments, the Commission should withdraw the proposed amendments, should perform studies necessary to demonstrate which transuranium radionuclides and what concentrations of those radionuclides which if buried in a licensed burial facility would ultimately cause measurable and significant human injury, and should, after the completion of those studies, issue another proposed amendment that prohibits burial of only those radionuclides and concentrations which are demonstrated to cause significant human injury.

We appreciate the opportunity to review the proposed amendment and trust that the above comments will contribute to more effective regulations.

Very truly yours,

A. N. Tschaeche Administrator-Licensing M/C 273, Ext. 2235

hb

ROCHESTER GAS AND ELECTRIC CORPORATION . 89 EAST AVENUE, ROCHESTER, N.Y. 14649

FRANCIS E. DRAKE JR. CHAIRMAN OF THE BOARD

DOCKET NUMBER

PROPOSED RULE

Waste Manager

TELEPHONE AREA CODE 716 546-2700 STATE

111974

PROPOSED BULE PR-202150 (39 FR 32921)

Transuranic Waste

November 5, 1974

Acknowledged by card 11-11-74,00

Secretary U.S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

K- Mise Notice (39 FR 32929)

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Re:

Draft Environmental Impact Statement on "Management of Commercial High Level and Transuranium-Contaminated Radioactive Wastes." WASH-1539 and Proposed Amendments to 10 C.F.R. 20 and 10 C.F.R. 150 Concerning Transuranic Waste Disposal, 39 F.R. 32921 et. seq. (September 12, 1974)

Dear Sir:

Rochester Gas and Electric Corporation is in agreement with the basic position stated in the comments filed October 25, 1974 by the Subcommittee on Radioactive Waste of the Atomic Industrial Forum's Committee on Nuclear Fuel Cycle Services, concerning transuranic waste disposal.

Unless clarified and revised the proposed amendments to Parts 20 and 150 could cause substantial and unnecessary expenses to Rochester Gas and Electric Corporation.

Very truly yours

Francis E. Drake, Jr. Chairman of the Board and Chief Executive Officer

c.c. Office of the Assistant General Manager for Biomedical and Environmental Research and Safety Programs U.S.Atomic Energy Commission Washington, D. C. 20545



Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Re: Proposed Rule Making on Transuranic Waste Disposal 39 Federal Register 32921 (September 12, 1974)

The following comments are presented by Nuclear Engineering Company, Inc. concerning the proposed rule making on transuranic waste disposal contained in the above referenced Federal Register Notice.

1. As operator of four commercial nuclear waste disposal sites, Nuclear Engineering Company, Inc. agrees that waste which contains <u>substantial</u> quantities of transuranic elements should be placed under federal control to obtain maximum protection of the environment. However, we disagree that this necessarily requires federal operation of interim storage facilities for all transuranic-bearing waste as appears to be implied in the proposed rule. We believe it is both feasible and preferable for the handling of most waste potentially encompassed by the proposed rule to continue to be conducted on a licensed, commercial basis. In this way the efficiencies and economies of commercial activities can be retained concurrently with government regulation and on-site continuous control to assure maximum safety and security.

2. The proposed amendments to 10 CFR Parts 20 and 150 do not contain a technical definition of "transuranic waste". If these proposed rules were adopted, it would be necessary for the waste originator to assume the responsibility for measuring and certifying the transuranic content of all waste generated.

Acknowledged by card 11-4-74, cas

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545 October 31, 1974 Page 2

According to the Statements of Consideration for the proposed rules: "Radwaste from nuclear reactors would not <u>generally</u> be considered transuranic waste under <u>normal</u> operating conditions." (Emphasis added). The Statement goes on to say: "Measurements made to determine the presence or absence of transuranium elements should be sufficiently sensitive to detect contamination levels as low as 10 nanocuries of transuranic elements per gram of waste. Waste that is suspect, but which has been measured and is not contaminated with more than 10 nanocuries per gram should be consigned to a licensed burial ground."

In the absence of further clarifying language the above quoted excerpt from the Statement appears to imply that "suspect" waste which cannot or has not been measured must be consigned to the AEC whether significantly contaminated with transuranic materials or not. This could have the effect of being interpreted as requiring the measurement of every waste shipment and in the long run of directing more waste to the AEC.

3. For commercial wastes which frequently contain beta/gamma substances, there is no practical way in which a 10 nanocurie per gram "guideline" could be routinely measured after waste collection and packaging. There are no known non-destructive methods either available or under development for external assay of transuranic content when the contents of a container are also substantially beta/gamma active. Any measurements would thus have to be made at the point of origin. Such measurements are difficult, expensive and involve significant radiation exposure to operating personnel. One example of this problem would be attempting to measure the plutonium content of spent demineralizer resins from nuclear power plants.

4. The proposed rules also lack definite statements on technical specifications and charges for the solidified wastes assigned to the AEC. Without such specific information there is no way for waste originators to assess the impact on their operation or any means for compliance if the rules were to be adopted. Because this contemplated change could have an expensive impact on the entire nuclear industry the proposed rule making should be deferred until such information is available for consideration as part of the rule making action.

An example of how these proposed rules might have a detrimental effect is as follows. Storage charges of \$30

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

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Octoor 31, 1974 Page 3

to \$50 per stored cubic foot for transuranic contaminated waste have been estimated by the AEC and Battelle Pacific Northwest Laboratory, respectively. If these charges were to be imposed by the AEC, this large increase over commercial burial charges would create a substantial monetary incentive for dilution of waste to reduce their transuranic content below any AEC established limit on these contents to permit disposal in a licensed commercial burial ground. This would have the undesirable effect of tending to generate more waste volume for commercial burial instead of the presumably intended effect of restricting burial of transuranics. This should indicate the necessity for developing specific details prior to promulgation of any such changes to 10 CFR Parts 20 and 150.

5. Without preparation by the AEC of more detailed information on total costs to the nuclear industry and standards of compliance with the proposed new rules as well as benefits to be derived therefrom, it is not possible for the AEC to prepare a valid cost/benefit analysis in an environmental impact statement in accordance with applicable requirements. The draft environmental impact statement prepared by the AEC on Management of High Level and Transuranic Waste is deficient in this respect. This is another reason why action on this rule must be deferred.

Very truly yours,

NUCLEAR ENGINEERING COMPANY, INC.

James N. Neel

Vice Chairman of the Board and Chief Executive Officer

JNN:ea



Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

Subject: Comments on Draft Environmental Impact Statement "Management of Commercial High Level and Transuranium-Contaminated Radioactive Wastes," WASH-1539, and Proposed Amendments to 10 CFR 20 and 10 CFR 150 Concerning Transuranic Waste Disposal

Dear Sir:

The comments herein were prepared by the Subcommittee on Radioactive Waste of the Atomic Industrial Forum's Committee on Nuclear Fuel Cycle Services and are submitted in response to Federal Register notices of September 12, 1974. A list of the subcommittee members is attached hereto.

We endorse the concept of the U.S. Atomic Energy Commission that it take physical possession of and assume permanent responsibility for both the high level radioactive waste generated from the aqueous recovery of spent nuclear fuel and transuraniumcontaminated radioactive wastes. Further, the Commission's intent to provide interim retrievable surface storage of radioactive high level waste is endorsed as the logical interim step. The committee believes that any of the three alternate interim retrievable surface storage systems described in WASH-1539 is adequate from the standpoint of reliability and for the protection of public health and safety for generations to come.

The draft states that the AEC will continue its efforts to establish a permanent disposal system for high level radioactive wastes based on placement in geologic formations. It is the subcommittee's opinion that such ultimate disposal techniques should be defined as soon as possible.

In determining the preferred location for a surface storage waste facility (or facilities) for both types of waste, the Commission should give consideration to the cost of transportation from

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Secretary of the Commission October 25, 1974 Page 2

the generation sites to the interim facilities as well as the cost of transportation from the interim facilities to a permanent disposal site. We also recommend that the AEC accept title to the wastes at the earliest possible date following their conversion to an acceptable form and that waste form and the interim storage concept be based on cost effectiveness considerations rather than on the existence of an AEC operating site.

State of the art technologies for protecting the public health and safety are now available. Hence, specific criteria for interim storage packaging could be and should be written now. The adoption of such technologies, however, should not foreclose the use of future technological refinements which might provide further safety margins or greater efficiency without invalidating earlier approved technologies.

If the requirements of the draft statement are to be implemented within the time frame indicated, the schedules for developing the required technology and facilities must be accelerated. For example, the development program for permanent disposition of transuraniumcontaminated hulls calls for initial operation of the storage system in the period FY 1981 to FY 1983. At that time, significant quantities of hulls will already have been generated and should have been sent to interim surface storage facilities.

To minimize handling and shipping, we recommend that consideration be given to AEC ownership of both the interim high level waste and the transuranic waste storage facilities at the individual production sites. However, these facilities could be owned either by industry or by the AEC, or operated for the AEC by industry.

Complete separation of transplutonium elements from high level waste should be recognized as developmental at best. Endorsement of this concept may subsequently be shown to be in conflict with cost benefit considerations.

The problems of disposal of large, high gamma-alpha contaminated waste, such as failed equipment, has not been properly addressed in the draft statement.

We also wish to point out that the draft statement has the nature of a development program and, while the goals are clearly delineated, the draft does not present a firm time schedule nor does it furnish enough hard data for industry to make investment decisions which are required in the very near term.



Secretary of the Commission October 25, 1974 Page 3

Since transuranium-contaminated wastes are treated in both the draft impact statement and the notices on proposed changes to 10 CFR Part 20 and Part 150, our comments on these two notices follow.

Although we agree that wastes which contain substantial quantities of transuranics should be placed under Federal control and that the interim retrievable surface storage systems should be owned by the Commission, we are concerned that none of the management methods proposed for interim storage for commercial transuranium waste offers the optimum in terms of cost effectiveness. We recommend that a program be initiated promptly to accomplish this goal and we would be pleased to work with the Commission on such a program.

We also note that the proposed amendments to 10 CFR Part 20 do not contain a definition of transuranic wastes. The introductory remarks discussing the proposed amendments make reference to general classifications of certain types of wastes as transuranic on the basis of their origin or upon a measurement at a 10 nanocuries per gram level. This latter type of classification is not practical in commerical nuclear facilities, considering the low concentrations encountered with many types of waste. For example, it is stated in WASH-1539 (p. B-3) that "at present, external radiation measurements on waste packages cannot detect plutonium at this low a concentration." The general classifications are too broad and subject to too much interpretation. A preferred alternative, not dependment upon questionable or undeveloped measurement techniques, would be to classify wastes upon the likelihood of their direct and substantial contact with transuranic materials, a procedure that we believe is now followed at AEC facilities. We propose that the following basis be adopted for classifying wastes with respect to transuranic content.

1. Transuranic wastes:

Those wastes which have been in direct contact with materials containing transuranium bearing elements; for example, wastes originating in enclosures and process glove boxes containing transuranic elements.

2. Non-transuranic wastes:

Wastes originating in uncontaminated controlled areas outside of plutonium enclosures and process glove boxes, including radwastes associated with or originating in current types of nuclear Secretary of the Commission October 25, 1974 Page 4

power reactors and wastes from plants or plant areas not processing or handling transuranium elements.

Wastes not clearly falling into the above categories should be classified on an individual basis after a careful review of plant operations to determine the likelihood of transuranic contamination.

It should be noted that, as yet, there has been no definition of the form of solid wastes that would be acceptable to the AEC, neither has any indication been given as to the costs associated with the AEC management and disposal of such wastes, nor has the site to which such materials are to be delivered yet been named. In the absence of such information, the proposed amendments are considered premature.

It is most urgent that waste form specifications, packaging requirements, and charges for services be stated in a complete and consistent form at the earliest possible date and certainly prior to the adoption of any such amendments. Such specifications, requirements and charges should be set forth in the proposed amendments and not left to future notices.

Sincerely, Kall W Deuster

Ralph W. Deuster Chairman

RWD:cl

Attachment

ATTACHMENT

Atomic Industrial Forum Subcommittee on Radioactive Waste

of the

Nuclear Fuel Cycle Services Committee

* * * * * * * * * * * * * * * * * *

Ralph W. Deuster Emanuel Gordon Nuclear Fuel Services, Inc., Chairman Atomic Industrial Forum, Secretary

S. J. Beard Gary R. Bray Irving Knudsen James H. Leonard E. D. North Edmond C. Tarnuzzer Peter T. Tuite E. E. Voiland Charles R. Woods Exxon Nuclear Company Allied General Nuclear Services Westinghouse Electric Corporation Nuclear Engineering Company Nuclear Fuel Services, Inc. Yankee Atomic Electric Hittman Nuclear & Development Corporation General Electric Company NUMEC

10/25/74



Westinghouse Electric Corporation

Power Systems

Water Reactor Divisions

Box 355 Pittsburgh Pennsylvania 15230

October 31, 1974

U. S. Atomic Energy Commission Office of the Secretary of the Commission Washington, D. C. 20545

Attention: Docketing and Service Section

Subject: Proposed Rules, 10CFR Parts 20 and 150 Transuranic Waste Disposal

By notice published in the Federal Register of September 12, 1974, the Commission announced proposed rules dealing with procedures to be followed in disposing of material designated as transuranic wastes. As provided in that notice, the Westinghouse Electric Corporation wishes to file comments on that proposal.

It is the Westinghouse position that the proposed rule is premature and should not be adopted at this time. In support of our position that the rule change not be implemented now, we would like to call attention to the fact that such important matters as waste form, specifications, packaging requirements, destination, charges, and provisions for licensee on-site storage are not available for comment as integral components of the proposal. Some of these matters would be of immediate concern to a licensee; all of them eventually would be of major importance. Furthermore, by notice in the Federal Register on the same day, the Commission announced the availability of a draft environmental statement, WASH 1539, dealing with options available to the AEC regarding waste management. The facts and determinations produced during that proceeding should be available as part of the input to this proposal. On the other hand, as clearly stated in the Statement of Considerations, the Commission has no hesitation in finding that those quantities of transuranics (plutonium) already disposed of by burial constitute no "hazard to man or the biosphere". If this is so, there should be no overwhelming urgency to terminate existing practices; and continuing to bury minor quantities of plutonium should be permitted until such time as the Commission has a specific substitute program.

Westinghouse also would like to comment on the interpretation and implications of some of the technical provisions in the regulations.

Acknewiedged by card 11-4-74, 000

Most important is the absence from the regulations of an acceptable definition of transuranic wastes. The Statement of Consideration notes that a measured specific activity of 10 nCi/g is being used as a criterion as to whether the wastes should be excluded from burial in a commercial burial ground. However, the proposed regulations merely designate "atomic number greater than 92", permitting no exclusion.

Westinghouse has no serious argument with the 10 nCi/g value as an arbitrary de minimus criterion, other than that it would possibly be extremely difficult to measure accurately. However, since it apparently is unrelated to any demonstrable health hazard, we would urge that the Commission retain a degree of flexibility concerning adjusting it by a factor up to an order of magnitude.

We also urge that the nuclides to be considered when determining the 10 nCi/g quantity specifically exclude relatively short-lived isotopes such as the ²³⁸ Pu and ²⁴¹ Pu isotopes. Since these nuclides decay fairly rapidly to daughters having a much lower specific activity, the activity determined after they have been excluded will more realistically represent the amount of activity requiring permanent disposal. Present provisions in USAEC Manual Chapter 0511 specifically authorize such an exclusion. On the other hand, extrapolating from the 10 nCi/g long-lived value to the gross specific activity allowed in a sample could result in a level in the actual sample that can be realistically measured.

Another comment on the content of the proposed regulations applies to proposed § 20.306. Since the form, packaging and material specifications to be imposed on the material are undetermined at this time, we suggest that the proposed wording be changed to read, "...shall be prepared, packaged and transferred to...". This wording would permit general inclusion of segregation, compacting, solidifying, etc. in the AEC's requirements without requiring revision of the regulation. However, in that regard, we would request that the specific requirements involved in "solidification" be provided if the Commission were to retain the presently proposed terminology.

We assume that the comments regarding the explicit designation of nuclides to be considered transuranic will be appropriately applied to the proposed parallel change to 10CFR, Part 150.

Thank you for this opportunity to contribute to the regulatory process.

Very truly yours,

K. R.Schendel License Administrator

Allied-General Nuclear Services Post Office Box 847 Barnwell, South Carolina 29812

W. J. Price Executive Vice President

October 28, 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

(803) 259-1711 BOCKETE ISLEE 31 1974 = Docket Nos. 74-21233 and 74-21234

BRORDSED RUL PR-20, 150 (39 FR 32921) Transwanic Waste

Dear Sir:

Allied-General Nuclear Services (AGNS) offers the following comments to assist in the preparation of the final form of the proposed: (1) regulations setting forth standards relating to transuranic waste disposal; (2) Environmental Impact Statement for Management of Commercial High-Level and Transuranium/Contaminated Radioactive Wastes.

These comments are submitted in reference to the notices appearing in the Federal Register on September 12, 1974.

Allied-General Nuclear Services agrees that the ultimate disposal of high-level transuranic wastes must be the responsibility of the Federal Government.

We also agree that the concept of the Government taking title to the wastes upon delivery and assessing a one-time fee is desirable. This allows the generator of transuranic wastes to identify the cost of disposing of these wastes in a timely manner; and, in turn, allows him to make the necessary charges for his services.

Generally, Allied-General agrees with the need for such proposals and regulations but is continually handicapped by the lack of timely decisions related to requirements, costs, and definition of both interim storage and ultimate disposal of waste.

Allied-General's comments, in regard to the subject documents, are presented in a manner designed to reflect the urgent U.S. Atomic Energy Commission October 28, 1974 Page Two

need for relevant, sufficient, consistent, and timely information regarding: (1) definition of waste forms, realistic criteria and waste handling requirements; (2) realistic costs associated with all aspects of interim and long term waste storage; (3) design; (4) development programs; (5) realistic time tables for regulation implementation, and for defining waste form criteria.

Definitions

8.11

Allied-General was disappointed in reviewing the subject documents to discover that:

1. There is a general lack of express recognition of two important waste forms, i.e., solidification of Intermediate-Level Liquid Waste (ILLW) and High-Level General Process Trash (HLGPT). Both are very real and must be considered. Incorporation of ILLW into High-Level Liquid Waste (HLLW) may solve that part of this problem but not the HLGPT.

The only even oblique reference Allied-General could find to ILLW was on page 2.4-12 where it is mentioned in passing. The reality of the problem is that in volume the Barnwell Plant probably will generate (as a solid) about as much ILLW as HLLW.

The draft statement does not directly ad-2. dress the non-heat generating transuranic waste which requires shielding from penetrating radiation. The report's attitude indicates this type of waste may be handled as high-level waste. If this is the case, then the impact of this waste on the high-level waste storage facilities must be assessed. Using the Environmental Report model package, a 1-foot diameter, 10-foot long cylinder, solidified high-level waste package will occupy about 2-1/2 cubic feet for each MTU of fuel reprocessed. On a similar basis we estimate that the following non-heat generating transuranic wastes will require significant shielding during storage and handling:

U.S. Atomic Energy Commission October 28, 1974 Page Three

| | Cu Ft/MTU |
|--|-----------|
| Hulls (uncompacted) | 17 |
| Solidified High Salt Liquid Wastes (If not combined with high-level | |
| solid waste) General Purpose Trash and Failed | 2 |
| Equipment | 6 |

TOTAL 25

In this case there will be 10 cubic feet of waste not requiring heat removal for every cubic foot of solid high level waste requiring heat removal. If compacting the hulls becomes practical then this ratio can be reduced to 5 cubic feet of shielded non-heat generating waste for each 1 cubic foot of high-level waste. In either case the quantity of shielded nonheat generating waste far exceeds the quantity of shielded heat generating high-level waste. The Commission is urged to recognize the different requirements for handling these two types of waste and to provide appropriate facilities for economical disposal of each. Recognition should also be given to the desire for larger diameter containers, especially for hulls, and full-size end fittings.

3. In Section 2.6.2 on page 2.6-7, the statement is made: "...transuranium-contaminated solid wastes in general, do not emit significant levels of penetrating radiation...".

In Section 3.2.2 on page 3.2-5, the statement is made: "...the levels of penetrating radiation from the transuranium waste will, in general, be so low as to be insignificant beyond the immediate area of the shipment. The only exception to the last statement (hulls) will need to be shipped in casks comparable to spent fuel or high-level waste casks...".

In actuality, recent data from the Idaho Chemical Plant shows that about 25% of its waste generated in the last



U.S. Atomic Energy Commission October 28, 1974 Page Four

10 months of 1974 has dose rates on the surface of the containers in excess of 500 mr/hr and about 42% of the waste has dose rates on the surface of the container in excess of 50 mr/hr.

It is Allied-General's preliminary opinion that approximately 10-20% of our general process trash (GPT) will require special handling or shielding to reduce operator exposure. We are currently refining this number, but considering the as-low-as-practicable philosophy, it is doubtful that the percentage would decrease. While we do not know the dose rates above which the Commission considers such waste to be a handling or storage problem, we assume that a dose rate of 500 mr/hr would not be deemed insignificant.

Allied-General requests the Commission to address these two waste forms in the Final Environmental Statement. As indicated above, handling of GPT is most assuredly a matter which must be dealt with. It is conceivable that ILLW may also be a discrete waste form if technology does not permit its solidification with HLLW.

4. The waste volumes by form and amount are inadequately defined. For example in Section 1.2.2 on page 1.2-3, the projected shipments and total waste volumes from all sites are 600 shipments per year and 45,000 cubic feet respectively. Allied-General is projecting an annual generation of close to 25,000 cubic feet of solidified HLLW, solidified ILLW and hulls from the Barnwell Plant. This does not include the HLGPT. Another example is in Section 1.2.7 on page 1.2-13. Projections for annual shipments (by the year 2000) and the volume of waste hulls are 540 and 60,000 cubic feet respectively.

Also, the Final Statement should clarify what is meant by a "shipment". 540 shipments for about 60,000 cubic feet is 111 cubic feet per shipment. Does this assume multiple containers per shipment, massive containers, or what? (AGNS <u>presently</u> envisions about 15 cubic feet of hulls in a container.)





U.S. Atomic Energy Commission October 28, 1974 Page Five

Design

The Draft Statement fails to recognize the urgent need for sufficient and timely design information.

In Section 1.2.8.1 paragraph No. 5, on page 1.2-14, the Draft Statement speaks of "two or three decades" before a permanent repository (geological disposal) is available. This implies that containers must be designed for this interim period. The report fails to recognize that much necessary lead time is gone. We are currently designing equipment, selecting product forms and are ready to design containers.

The report should be amended to reflect Allied-General's and industry's current needs. The following comments of WASH-1539 reflect our concerns with respect to design:

In Section 2.3.4.2 on page 2.3-34, Item
 (4), the definition of the period of time that "safe pressures" must be demonstrated should be made as soon as possible.

In Section 2.5.1.2 on page 2.5-3, this section should be expanded to include a discussion on the design criteria for high integrity canisters.
 Two points where decision is desired now are:

 The maximum allowable heat generation (AGNS expects more than the 5 kw shown in Figure 2.5.1, page 2.5-4);
 The form the closure must take.

3. In Section 2.6.2, on page 2.6-8, the statement is made: "Probably the simplest way to manage hulls would be to encapsulate them in a steel container of the same approximate size as is used for solidified commercial high-level waste..." This is not a tenable situation for Allied-General. We would need a hull container at least 24" in diameter to accommodate end fittings. We are planning on a container diameter in excess of three feet. U.S. Atomic Energy Commission October 28, 1974 Page Six

> 4. In Section 1.2.8.1, on page 1.2-15, what are the acceptance criteria for canisters? Allied-General is ready to start the design of canisters when the criteria are made known.

The Final Statement should be expanded to include a detailed discussion of the compatibility of equipment used by the shipper and that of receiver. Particular attention should be directed to design criteria for transporting, unloading, handling and storing.

Cost

1. The Final Statement should address cost on a more realistic basis. For example: (1) In Section 1.5.1, a basis of 100 years is used for the program cost estimate. As the water-basin alternative is an interim program, a cost period of less than 50 years is a more realistic basis than 100 years.

2. In Section 1.9.1, on page 1.9-7, it is not clear whether the charge of \$30/cubic foot includes hulls and solidified ILLW. Definite charges should be presented soon so industry can make intelligent business decisions.

3. The Draft Statement in various places addresses the receipt of solidified waste (HLLW) and conversion to an ultimate form at the RSSF. Yet, the Draft Statement also addresses alternate acceptable forms, e.g., glass. If the product form is calcine or salt, then certainly further processing can take place (with difficulty and expense). But if it is in, for example, the glass form, then further processing is essentially precluded. In this same regard, it is essential that the Commission further define repository charges. We have recent indications (informally) that a premium price will have to be paid for calcine as the shipped form and also for uncompacted hulls.

It is imperative that repository charges must be fixed for all types of waste as soon as possible so industry can make intelligent decisions on what type of waste processing facilities to build. U.S. Atomic Energy Commission October 28, 1974 Page Seven

4. Under the two options mentioned on pages 9.1-13 thru 9.1-15 if waste is stored on site until a permanent repository is defined and built, (a disadvantage not mentioned, which should be) the capital-cost burden for long-term interim storage is on industry. An ancillary disadvantage is the delay of definition of "final" repository costs with attendant uncertainty on the costs of the nuclear fuel cycle.

5. The cost estimates for initial construction which appear in Table 9.1.1, on page 9.1-25, appear to be low. Recent cost estimates for the Barnwell Nuclear Fuel Plant waste facilities are significantly higher.

In general, the report fails to consider the intangible costs which are incurred by industry due to delays caused by lack of direction from the Commission. This lack of direction results in industry's inability to develop capability at a time when it is required.

State-of-Art and Development Programs

The Draft Statement fails to recognize that high-level waste has been satisfactorily managed at the Idaho Chemical Plant for a number of years.

The report devotes too much attention to the alternative of storing spent fuel instead of reprocessing it. A quantitive and safety comparison would have shown this to be an unacceptable alternative.

The thrust of development programs should be consistent with the stated national goal of being independent of foreign oil suppliers by the mid-1980s.

In order to assist this overall goal, there is a requirement for timely regulations and scheduling of development programs consistent with short and long term energy needs. For example, early publishing of "Waste Form Specifications, Packaging Requirements, and Charge" is necessary, if design and construction of facilities for transport of transuranic





U.S. Atomic Energy Commission October 28, 1974 Page Eight

wastes are to be carried out expeditiously. Moreover, the proposed regulations relating to transuranic waste disposal should recognize that it may not be possible to meet the 5year limit for on-site storage for those facilities in operation or under construction at the time the proposed regulation is put into effect. The time for planning, designing and licensing facilities to meet the form criteria and packaging requirements may exceed five years for those materials requiring shielding from penetrating radiation during storage and transport.

In particular, if facilities have to be provided for process liquids other than the High-Level Liquid Waste (so called Intermediate Level Liquid Waste) the 5-year shipping requirement might not be able to be met.

Miscellaneous Comments on the Proposed Changes to 10 CFR Part 20

1. The statement that "all waste originating in restricted areas of ... fuel reprocessing facilities ..." that appears on page 32921 of the Federal Register dated September 12, 1974, implies that waste from certain areas of reprocessing facilities and waste from nuclear reactors would not be considered transuranic. The use of the term "restricted" needs to be defined or clarified.

2. The statement appearing on page 32922 needs elaboration where it is stated that the "...Commission is also considering whether radionuclides other than those covered by this proposed regulation...should be earmarked for management by the AEC..."

3. The statement that "Rad waste from nuclear reactors would not generally be considered transuranic waste under normal operating conditions", as it appears in the preamble to the proposed regulation, should be included in the text of the regulation itself. As things stand at present, in the proposed regulations, the matter is wide open for interpretation. It should also be clarified that waste from all spent fuel storage pools (reprocessing plants as well as reactor) is to be considered as not being transuranic waste. U.S. Atomic Energy Commission October 28, 1974 Page Nine

4. The statement that "No licensee shall dispose of waste material...unless...total quantity...buried does not exceed...1000 times...amount specified in Appendix C...", appearing in proposed Section 20.304 of 10 CFR, should stand by itself. Appendix C should be revised to delete transuranic elements.

Miscellaneous Comments on the Draft Environmental Statement

1. In Section 1.5.3 on page 1.5-3, it is not clear why permanent geologic disposal is not a viable alternative to retrievable storage at this time. The section should be expanded to include a discussion on what additional data is required and what the Commission is doing to obtain this data.

2. In Section 1.5.5 on page 1.5-7, no reference is made to the possibility of providing engineered features to the shallow underground storage concept which might make this a desirable alternative.

3. It is not clear in Section 2.6.3, on page 2.6-10 why excessive concern is given to external contamination and assaying as described in description of container unloading and storage area. The containers are destined to be stored in the geological formation. It is anticipated that the material in the containers would have been assayed at the shipping facility. Certainly the alternative repository is safer from a criticality standpoint than the interim storage facility.

4. Reference to disposal of waste generated due to RSSF operation by burial is made on each page numbered 3.1-9, 3.1-19 and 4.2-3. How can this be done if the contamination results from transuranic waste - which must be disposed of in geological formation, etc? It is suggested that the Final Statement should be consistent in this respect.

5. On page B-3, the last sentence of the first full paragraph implies that segregation by source may be an acceptable means of classifying non-transuranic versus transuranic waste. Allied-General agrees with this concept and recommends that it be included as part of the proposed rule changes to 10 CFR Part 20 now being contemplated. U.S. Atomic Energy Commission October 28, 1974 Page Ten

It is our view that the final form of the subject documents, with revisions along the lines suggested, is urgently needed. It is clear from our comments that both Allied-General and the rest of the nuclear industry require a timely and realistic resolution of the waste disposal problem.

In view of the importance of this subject, we wish to request an opportunity to appear at the hearing which has been scheduled for November 12, 1974, and accordingly we are filing a separate notice of intention to participate.

Sincerely yours, Price

cc: Office of the Assistant General Manager for Biomedical and Environmental Research and Safety Programs, AEC



EROPOSED RULE PR 20, 150 (39 FR 32921) Transuranic Waste

COLORADO DEPARTMENT OF HEALTH

4210 EAST 11TH AVENUE • DENVER, COLORADO 80220 • PHONE 388-6111 Edward G. Dreyfus, M.D., M.P.H. Executive Director

OCT 21 1974 =

Office of the Secretary Public Proceedings

OCCUPATIONAL AND RADIOLOGICAL HEALTH DIVISION

October 17, 1974

Mr. Gordon M. Grant Acting Secretary of the Commission U. S. Atomic Energy Commission Washington D.C. 20545

ATTENTION: Dockets and Service Station

Dear Mr. Grant:

We have reviewed the proposed changes in 10 CFR 20 as printed in FR Vol. 39, No. 178 page 32922 and concur with the philosophy that the ultimate disposal of transuranic wastes be the responsibility of the Commission and avoid proliferation of waste disposal sites involving transuranics. The same may be said for the proposed change in 10 CFR 150 on page 32923 of the same Federal Register.

However, we do retain reservation to the inference made in Footnote 1 on both referenced pages. While the 10 nanocuries (1 x 10⁻³ uCi)/ gram may be appropriate for contained reactor wastes, reference to the upper concentration range in the earth's crust for natural radium is not appropriate for comparison against a man-made element and situation.

Regarding the comments preceeding the proposed rulechange when considering wastes already disposed of by burial, it must be specified that the burial in question is proper and adequate to protect the health and safety of the public for the foreseeable future and reaonably beyond (U.S.A.E.C. Rocky Flats Plant).

Asknowledged by card 10-21-74,000

Gordon M. Grant Acting Secretary of the Commission October 17, 1974 Page Two

Aside from these comments, we feel the rule change proposal justified. Additionally, we recommend that the blanket authorization for disposal by burial in the soil as provided by 10 CFR 20.304 be deleted in its entirety and a provision similar to the one involving disposal by incineration, 20.305, be provided.

Sincerely,

Albert J. Hazle, Director

AJH/1jw

cc: Exports and Agreement Branch, AEC Dr. Alfred Whatley, WINB



U. S. Atomic Energy Commission Washington, D. C. 20545

Dear Sir:

The Atomic Industrial Forum's Committee on Nuclear Fuel Cycle Services wishes to participate, through one or more representatives, in the public hearing scheduled for November 12th, at Germantown, on the draft environmental statement "Management of Commercial High Level and Transuranium-Contaminated Radioactive Waste" (WASH-1539). Comments will also be submitted to the Office of the Secretary on WASH-1539 as well as on the proposed amendments to 10 CFR Part 20 and 10 CFR Part 150 which bear directly on the subject of the hearing.

We wish to point out that the cut-off date of October 28th for receipt of industry comment on WASH-1539 is short. However, comments on 10 CFR 20 and 10 CFR 150, the content of which bears directly on part of WASH-1539, are not due until November 11th, one day before the hearing is scheduled. We suggest that since the subject of commercial transuranium-contaminated waste is common to all these documents, that a common due date for comments be adopted.

We might also point out that many of the industry representatives participating in the preparation of these comments will be engaged the week of October 28th in the Forum and ANS meetings in Washington. Accordingly, we request that the final date for comments on WASH-1539 be moved to November 11th, the same final date for the submission of comments on 10 CFR 20 and 10 CFR 150 and that the hearing date, as mentioned above, be moved to November 27th.

Sincerely,

Carl Waloka

CW/jmc

cc: Office of the Assistant General Manager for Biomedical and Environmental Research and Safety Programs U. S. Atomic Energy Commission Washington, D. C. 20545



PROPOSED RULE PR-20, 150 (39 FR 32921) Transmanic Waste

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OFFICE OF THE SECRETARY

Karl H. Puechl Nuclear Consultant 34 River Park Drive Atlanta, Georgia 30328

Telephone: (404) 252-8821

Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attention: Dockets and Service Section

Subject: Comments to September 12, 1974 Federal Register Notice on Proposed Regulation Covering Transuranic Waste Disposal.

Gentlemen:

In principle, I am opposed to the proposed regulation because, based upon the content, or lack thereof, I consider it premature. Primarily, I object because one cannot comment intelligently when the Commission has not yet faced up to all the facts surrounding the issue.

The proposed regulation does not state how the waste accepted by the AEC will subsequently be treated and managed. Further, it gives no indication relative to acceptable form, packaging, maximum acceptable radioactivity, and location of acceptance sites. In addition, it is silent relative to the magnitude of the proposed levy of fees. Without such knowledge, it is impossible to make an independent cost/benefit assessment, which I believe is necessary for intelligent comment.

Further, without such knowledge, especially relative to cost, one cannot even assess the viability of transuranic element processing. Could assigned fees be so high as to make such processing economically impractical? Assuming that this is not the intent, but that the levied fees will be economically acceptable, how can a processor of transuranic elements determine his overall costs when the proposed levied fees remain unstated? In the proposed regulation there is not even a hint relative to the method to be used for determination of the fee schedule.

I wish to point out that without such knowledge, the processor is placed in an impossible commercial situation. He cannot even quote processing prices on the basis of pass-

Acknowledged by gard 10-18-74, ere

through costs for waste treatment and waste management since waste and its treatment cannot be defined. Under the proposed regulation will it be economically attractive for a processor to acid digest, incinerate, compact or otherwise reduce the volume of waste? If so, he will need plant and equipment to carry out these operations. Such facilities can have environmental impact, and the extent cannot be determined under the proposed regulation. Also, in order to estimate pretreatment costs, such facilities must be designed. No one in his right mind would expend monies for the design of such facilities when the eventual materials acceptance criteria and fee schedule may make pretreatment unnecessary or impractical.

Even if the processor could define pass-through costs for reprocessing and mixed oxide fuel fabrication, this is not acceptable to utility customers. Under the present environment of increasing costs, it is not clear that reprocessing and subsequent re-utilization of residual fuel values are economically viable alternatives. GESMO indicates that this is so, but the GESMO analyses were based upon 1973 and early 1974 costs. Now, the industry is hearing about reprocessing prices in excess of \$100/kg of spent fuel, PuO2 conversion prices of about \$200/kg MO. If on top of these astronomic numbers one adds cost uncertainty relative to waste treatment and disposal, a utility is left without a basis for decision-making relative to the entire back-end of the fuel cycle.

With premature regulations, such as the one proposed, is it any wonder that nuclear power generation never seems to realize its full potential? Yes, we need such a regulation, and we need it yesterday; but we need a regulation that answers all pertinent questions, not one that brings up more questions than it answers.

Additional specific comments on the proposed regulation are given below.

The proposed regulation states that measurements can be made to determine the presence or absence of transuranic elements, with absence being defined as a level at or below 10 nanocuries of transuranic elements per gram of waste. Relative to this statement, what is the definition of 10 nanocuries? I suggest that the activities of Pu-238, Pu-241 and Am-241 should not be included in the accounting because of the associated relatively short half-lives and/or non-alpha emission.

The proposed regulation provides an example of transuranic

waste as being all wastes originating in restricted areas of plutonium processing and fuel fabrication facilities, etc., and further implies that wastes of such origin must be considered transuranic unless measurement verifies contamination levels at or below 10 nanocuries of transuranic elements per gram of waste. In this example, "restricted area" requires definition. If it pertains to the volume inside of glove boxes then I can concur. However, I suspect that the intent is to have such definition pertain to all areas wherein radiation levels under normal operation may exceed general population exposure limits, that is, all processing and fabrication areas confined by change rooms or air locks. Under such definition of "restricted area" I contend that the proposed regulation is too restrictive and unwarranted. In modern plutonium processing and fabrication facilities, activity releases from glove boxes that can result in contamination to greater than 10 nanocuries/gm are relatively infrequent. Also, in mixed-oxide fabrication facilities, such activity levels are highly unlikely since the plutonium in mixed-oxide starts out being diluted with about 20 times as much uranium (on a weight basis). 100% of all wastes generated in restricted areas of such facilities (of course, not including gloves or waste generated within the glove boxes) will, during normal operations, have negligible associated activity levels. If all such waste were transferred to the AEC, probably more than 90% of the volume of all waste transferred would have negligible associated activity. I contend that this in itself would create a hazard at some future date. If all such wastes were stored in association with some that were indeed hazardous, the tendency would be towards development of an attitude of unconcern and laxity. The best policy is for the AEC to be responsible for the management of truly hazardous wastes. I therefore suggest that wastes not be considered contaminated, no matter what its origin, unless monitoring information indicates that such contamination can actually exist. Where area air monitors, surface activity levels and smear sampling indicate that activity levels are negligible, let it be assumed that wastes generated within such areas during time intervals of such negligible area activity also contain negligible activity. Therefore, allow commercial burial of such waste, requiring only routine monitoring normally associated with removal of materials from restricted areas.

3

The statement relative to measurement to determine the presence of transuranic elements to less than 10 nanocuries per gram also presents a problem since there is no elaboration as to the monitoring procedures that are deemed to be satisfactory. As you know, plutonium has associated with

it relatively soft gamma rays that are readily self-shielded. To absolutely determine levels to less than 10 nanocuries/gm would require monitoring in geometries where self-shielding is negligible. Such monitoring is not practical. Therefore, I suggest that current waste monitoring techniques be deemed acceptable. More specifically, it is suggested that wastes be considered acceptable for commercial burial if weighing and gamma scanning of 55-gallon waste drums, using procedures approved by the AEC, indicate that contained activity is probably below 10 nanocuries/gm. Such imprecise assessment is deemed to be adequate since the 10 nanocurie/gm limit is based on similar imprecise assessment of the observed concentration of radium in the earth's crust. Besides, would it really make an environmental difference if a small quantity of buried waste had activity slightly in excess of 10 nanocuries/gm?

I trust that these comments will be given due consideration.

Very truly yours,

Harl H. Pruchel

Karl H. Puechl

UNITED STATED Togg

PROPOSED RULE PR-20 (39 FR 32921) Tranouranic Waste Disposal

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

> OFFICE OF THE ADMINISTRATOR

23 SEP 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

ATTENTION: Dockets and Service Section

Dear Sir:

The Environmental Protection Agency plans to comment on your Proposed Rules entitled, "10 CFR PART 20, Transuranic Waste Disposal, Proposed Standards for Protection Against Radiation," as contained in the <u>Federal Register</u>, September 12,1974, Vol. 39, No. 178. For further information, please contact Mr. Jackson Anderson of my office on 755-0770.



Sincerely yours,

Roldon Meyers

Sheldon Meyers Director Office of Federal Activities

Acknowledged by card 10-8-74,000



PROPOSED RULE PR-1 Transuranic Waste UNITED STATES ENVIRONMENTAL PROTECTION AGENC WASHINGTON, D.C. 20460

DOCKET NUMBER

OFFICE OF THE ADMINISTRATOR

23 SEP 1974

Secretary of the Commission U.S. Atomic Energy Commission Washington, D.C. 20545

ATTENTION: Dockets and Service Section

Dear Sir:

The Environmental Protection Agency plans to comment on your Proposed Rules entitled, "10 CFR PART 150, Transuranic Waste Disposal, Exemptions and Continued Regulatory Authority," as contained in the Federal Register, September 12, 1974, Vol. 39, No. 178. For further information, please contact Mr. Jackson Anderson of my office on 755-0770.



Sincerely yours,

neyers

Sheldon Mevers Director Office of Federal Activities

Asknowledged by card 10-8-74, cro

JAMES E. PEAVY, M.D., M.P.H. COMMISSIONER OF HEALTH

September 18, 1974

FRATIS L. DUFF, M.D., Dr. P.H. DEPUTY COMMISSIONER AUSTIN, TEXAS 78756

Texas State Department of Health

HAMPTON C. ROBINSON, M.D., CHAIRMAN ROBERT D. MORETON, M.D., VICE-CHAIRMAN ROYCE E. WISENBAKER, M.S. ENG., SECRETARY N.L. BARKER JR., M.D. CHARLES MAX COLE, M.D. MICKIE G. HOLCOMB, D.O. JOHN M. SMITH JR., M.D. W. KENNETH THURMOND, D.D.S. JESS WAYNE WEST, R. PH.

PROPOSED TRANSCRAPHE PR-202150 (39 FR 32921) Transcranic Waste

BOARD OF HEAL TH



Secretary of the Commission U. S. Atomic Energy Commission Washington, D. C. 20545

Attn: Chief, Public Proceedings Staff

Dear Sir:

Attached are our comments concerning the proposed regulatory amendments to 10 CFR 150 and 10 CFR 20 concerning the disposition of transuranic wastes. We believe they are selfexplanatory, however, should you have any questions or need expansion on any of the comments, please feel free to contact us.

Sincerely,

Martin C. Wukasch, P. E.

Martin C. Wukasch, P. E. Director Division of Occupational Health and Radiation Control

Encl.



- We do not feel the regulatory change goes far enough. We favor a policy which allows no burial of any radioactive material except by persons specifically licensed to make such burials.
- We are concerned about the necessity of retrieval and disposal of a number of generally licensed transuranic quantities as check sources and plated alpha sources which exceed 10 nCi which are apparently covered by this proposed regulation.
- 3. When transuranic logging sources are lost down hole, in oil and gas wells, they are for all practical purposes disposed of when they are cemented in place. Does this regulatory change encompass them?
- 4. From the explanatory comments on both Part 20 and Part 150, it is unclear whether or not this regulatory amendment applies to sealed sources. We feel this is a significant omission. For example, if this order does not cover sealed sources, what would be the regulatory position about a leaking (0.05 µCi removable contamination) Americium source?
- 5. The U. S. Atomic Energy Commission must be responsible for notifying all Agreement State Licensees of the regulatory change in 10 CFR 150.15(a)(7). The individual Agreement States should not be expected to notify its licensees of changes in U. S. AEC regulations.