JUN 2 1 1988

AC14-1
PDR

MEMORANDUM FOR: Victor Stello, Jr.
Executive Director for Operations

FROM: Eric S. Beckjord, Director
Office of Nuclear Regulatory Research

SUBJECT: PROPOSED RULE TO ALLOW ONSITE INCINERATION OF SLIGHTLY CONTAMINATED WASTE OIL AT NUCLEAR POWER REACTORS

RES has prepared an amendment to the regulations in 10 CFR Part 20 which would allow nuclear power reactor licensees to incinerate contaminated waste oil on site without the need for a specific license amendment. The proposed rule has been concurred in by the Office of Nuclear Reactor Regulation, Nuclear Material Safety and Safeguards, Governmental and Public Affairs, and Administration and Resources Management. The General Counsel has no legal objection. The CRGR has declined to review the proposed rule.

The action proposed falls within your rulemaking authority set forth in 10 CFR 1.31(a)(3) and so has been prepared for your signature. However, the Commission has indicated that rulemaking actions on requests for exemptions of specific waste streams from Commission regulations shall be subject to Commission approval, so the proposed rule has been transmitted as a negative consent item.

The enclosure contains the rule package consisting of the following items:

1. The Commission paper;

2. A Federal Register notice of the proposed rule (Enclosure 1) which constitutes a partial granting of PRM 20-15 as well as a notice of denial of remaining issues in the petition, and includes the Environmental Assessment and Finding of No Significant Impact as Appendix A;

3. The Regulatory Analysis (Enclosure 2);

4. A draft Congressional letter (Enclosure 3).

/s/
Eric S. Beckjord, Director
Office of Nuclear Regulatory Research

DISTRIBUTION
CIRC/CHRON/RF
SBJ. C.5.9 [PLEASE FILL IN THE APPROPRIATE FILE NUMBER]
EBeckjord
DRoss
BMorris
ZRosztoczy
RAlexander
WLahs
CMattsen

8811110151 881104
PDR PRM
20-15 PDR

RPHEB RAlexander 6/20/88

OFFC	:RPHEB CMattsen	:RPHEB	:RPHEB	:DRA	:DRA	:RES	:RES
NAME	:CMattsen/bh	:WLahs	:RAlexander	:ZRosztoczy	:BMorris	:DRoss	:EBeckjord
DATE	: 6/15/88	: 6/16/88	: /88	: /88	: 6/17/88	: 6/ /88	: 6/21/88

8811110151

OFFICIAL RECORD COPY

Date:

For: The Commissioners

From: Victor Stello, Jr., Executive Director for Operations

Subject: Response to a Petition for Rulemaking from the Edison Electric Institute and the Utility Nuclear Waste Management Group (PRM-20-15), dated July 31, 1984, to modify 10 CFR Part 20 to allow alternatives to low-level waste burial for disposal of slightly contaminated waste oils.

Purpose: To inform the Commission that the EDO intends to grant, in part, the petitioners' request and publish for comment a proposed rule which would allow nuclear power reactor licensees to incinerate, onsite, slightly contaminated waste oils without the need for a specific license amendment. The incineration operations would be subject to continued compliance with existing plant discharge limits, established in accordance with Part 50, Appendix I. The intent of the proposed rule is to provide a potentially cost-effective and environmentally sound method for disposal for this waste stream other than burial at a licensed low-level waste disposal site. Since the petitioners' primary objective would be achieved through this action, the remainder of the petition would be denied without prejudice.

Category: This is a negative consent item. The action proposed clearly falls within established Commission policy as set forth in 10 CFR 1.31(a)(3) which delegates certain rulemaking authority to the Executive Director for Operations.

Other related documents include: (1) 10 CFR Part 50, Appendix I, which provides numerical guidelines for keeping releases of radioactive materials to the environment to levels which are ALARA; (2) a Policy Statement published in the Federal Register on August 29, 1986 (51 FR 30839), which established standards and procedures for expeditious Commission action on petitions to declare certain waste streams to be "below regulatory concern" (BRC); and (3) an Advance Notice of Proposed Rulemaking published in the Federal Register on December 2, 1986 (51 FR 43367).

Contact:
C. Mattsen, RES
492-3638

In a Staff Requirements Memorandum dated August 12, 1986, the Commission indicated that rulemaking on all requests for exemptions of specific waste streams from Commission regulations will be subject to Commission approval. Although the petitioners requested that radionuclide concentrations be established at which disposal of waste oil may be carried out without regard to the radioactive material content, the proposed action is limited to allowing onsite incineration of waste oil under existing operating effluent limits determined to be "as low as is reasonably achievable."

Discussion:

The Edison Electric Institute (EEI) and the Utility Nuclear Waste Management Group (UNWMG) petitioned the Commission on July 31, 1984 (PRM-20-15), to initiate rulemaking to define a concentration of radioactive material in reactor-generated waste oils which would permit disposal of these oils without regard to their radioactive material content. Notice of receipt of this petition was published in the Federal Register on September 19, 1984 (49 FR 36653) with a 60-day comment period. Currently, the only generically approved method of disposal for low-level radioactively contaminated oil from nuclear power plants involves solidification or immobilization, packaging, and transportation to and burial at a licensed disposal site. The petition was submitted in response to Commission views expressed in the Supplementary Information statement accompanying publication of the final rule that created 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste" (December 27, 1982; 47 FR 57446). In that statement, the Commission expressed its view that the establishment of standards for waste for which there is no regulatory concern would be beneficial and would, among other things, reduce disposal costs, help preserve the limited capacity of the regional licensed waste disposal sites for the disposal of wastes with higher levels of activity, and enhance overall site stability of disposal facilities by reducing the volume of Class A waste (discussed in 10 CFR 61.7(b)(2) and defined in 10 CFR 61.55). That view was further advanced when the Commission published a Policy Statement (August 29, 1986; 51 FR 30839) on the expeditious processing of petitions to exempt specific waste streams from the Commission's regulations. The Commission subsequently published an Advance Notice of Proposed Rulemaking (ANPRM) on December 2, 1986 (51 FR 43367) soliciting public comments on the broad concept of defining classes of waste which were BRC.

The petition predates the Policy Statement and ANPRM and does not include all of the information needed to allow expedited handling. Although the petitioners were accorded an opportunity to supplement the petition by providing the information described in the Policy Statement, they have elected not to do so. Therefore, the petition is not eligible for expedited handling as

authorized by Section 10 of the Low-Level Radioactive Waste Policy Amendments Act, as amended.

The petition proposed a broad exemption using a 1 mrem/yr dose criterion with nuclide specific concentration limits for each of several disposal alternatives: on- or offsite incineration, on- or offsite burial, road stabilization (spraying), and recycling.

After due consideration of all the issues involved, the staff has concluded that, in responding to this petition at this particular time, it would not be appropriate to attempt to make a generic determination as to what level of radioactive contamination in waste oil would constitute a level which is "below regulatory concern." The petition did not supply adequate information on which to base the selection of a dose criterion for waste oil nor an adequate basis for evaluating all of the proposed alternatives, although considerable effort was made to equate proposed concentration limits to the proposed 1 mrem/yr dose criterion and also to respond to public comments with a revised petition.

Comments on the EEI/UNWMG petition raised questions concerning some of the specific disposal alternatives and exemption limits proposed by the petitioners. Since the petitioners were unable to supply sufficient information to enable the staff to evaluate all of the disposal alternatives identified by the petitioners, the comments cannot be properly addressed and the petition cannot be granted as proposed.

The staff believes, however, that action on the portion of the petition which would permit onsite incineration of slightly contaminated waste oil is warranted in view of the very small radiological doses imposed on any member of the public in an unrestricted area, the potential reduction in fire and toxic risks, the inordinate costs of disposing of this waste material in licensed low-level waste burial grounds, and the need to use the limited burial ground space most efficiently. The staff is therefore proposing to amend 10 CFR 20.305 to provide this relief for affected utilities under the ALARA provisions in existing regulations. The staff recommends that the remainder of the petition be denied without prejudice. The petitioners have expressed the view that this approach should provide much of the desired relief.

The proposed rule would apply to all operators of nuclear power plants licensed under 10 CFR Part 50 and would allow the onsite incineration of slightly contaminated waste lubricating oils and hydraulic fluids without the need to apply for a specific license amendment as is presently required under the provisions of §20.302 and §20.305. The incineration could be carried out either in the licensee's existing auxiliary boiler or

incinerator, if available, or in an onsite facility specifically constructed for this purpose. Under the provisions of the proposed rule, resulting effluents would be accounted for against existing discharge limits set in individual plant technical specifications, which are generally 15 mrem/year to any organ of an individual in an unrestricted area. These technical specifications have been established under Appendix I to Part 50, which requires licensees to maintain total effluents from each plant or site at or below levels determined to meet the ALARA criterion. Although actual effluents may increase slightly, the total amount of effluents released would not exceed the ALARA criterion and therefore the health and safety of the public would still be adequately protected.

Each licensee would be required to prepare and retain the following types of records in accordance with applicable NRC record retention requirements: (1) a description of equipment, facilities, and procedures that will be used to collect, store, determine the radionuclide content of, and incinerate waste oils; and (2) the results of the radiological and other analyses of each batch of waste oil discharged through the disposal system which demonstrate that effluents from this operation are maintained at levels below existing plant operating limits established under Part 50 in Appendix I and §50.36a.

The first part of this information would be submitted to the Commission under §50.71(e) as a change to the FSAR since it represents a change to the information submitted under §50.34(b)(2)(i) and (b)(3) and §50.34a in the original license application. A summary of the changes and safety evaluation will also be required by §50.59. The second part will be reported under existing semiannual effluent reporting requirements.

Recommendations: That the Commission:

1. Approve publication of the proposed revision of 10 CFR 20.305, as set forth in the draft Federal Register notice (Enclosure 1).

2. Certify that the rule, if promulgated, will not have a significant economic effect on a substantial number of small entities pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b).

3. Note:

   a. The rulemaking would be published in the Federal Register for a 60-day comment period;

b. The remainder of the petition will be denied through this rulemaking;

c. The proposed revision to §20.305 does not exempt resulting effluents from compliance with existing discharge limits established at each plant in accordance with Part 50, Appendix I;

d. Nothing in this action will preclude or otherwise prejudice further Commission actions on petitions to declare certain waste streams to be "below regulatory concern";

e. The proposed rule does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget approval number 3150-0011;

f. Appropriate Congressional Committees will be informed (Enclosure 3);

g. The Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification regarding economic impact on small entities and the reasons for it as required by the Regulatory Flexibility Act;

h. The Federal Register notice will be distributed by ARM to affected licensees, interested members of the public, and the petitioners;

i. The Office of Governmental and Public Affairs concurs that a public announcement is not needed;

j. A draft regulatory analysis has been prepared by the staff and is provided as Enclosure 2.

k. The staff has prepared an Environmental Assessment as required by the National Environmental Policy Act of 1969, as amended, and, based on that Assessment, has determined that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, the preparation of an Environmental Impact Statement is not required. The Environmental Assessment and Finding of No Significant Impact will be published in the Federal Register as required by 10 CFR 51.35 and 51.119, as Appendix A to the notice of proposed rulemaking. That assessment concludes that the

incineration of typical waste oils would not result in impacts to the health and safety of the public or the quality of the environment which are substantially different frc. those impacts previously considered during individual reactor licensing hearirgs; and

1. This amendment does not constitute a backfit under 10 CFR 50.109 and a backfit analysis is not required.

Victor Stello, Jr.
Executive Director for Operations

Enclosures:
1. Federal Register Notice
2. Draft Regulatory Analysis
3. Draft Congressional Letter

incineration of typical waste oils would not result in impacts to the health and safety of the public or the quality of the environment which are substantially different from those impacts previously considered during individual reactor licensing hearings; and

1. This amendment does not constitute a backfit under 10 CFR 50.109 and a backfit analysis is not required.

Victor Stello, Jr.
Executive Director for Operations

Enclosures:
1. Federal Register Notice
2. Draft Regulatory Analysis
3. Draft Congressional Letter

DISTRIBUTION
CIRC/CHRON/RF
SBJ. C.5.9
VStello
Edeckjord
TSpeis
DRoss
ZRosztoczy
BMorris
RAlexander
WLahs
CMattsen

OFFC	RPHEB	RPHEB	PPHEB	DRA	DRA	RES	RES	EDO
NAME	CMattsen/bh	WLahs	RAlexander	ZRosztoczy	BMorris	DRoss	EBeckjord	VStello
DATE	/ /88	/ /88	/ /88	/ /88	/ /88	/ /88	/ /88	/ /88

OFFICIAL RECORD COPY

Date:

For: The Commissioners

From: Victor Stello, Jr., Executive Director for Operations

Subject: Response to a Petition for Rulemaking from the Edison Electric Institute and the Utility Nuclear Waste Management Group (PRM-20-15), dated July 31, 1984, to modify 10 CFR Part 20 to allow alternatives to low-level waste burial for disposal of slightly contaminated waste oils.

Purpose: To inform the Commission that the EDO intends to grant, in part, the petitioners' request and publish for comment a proposed rule which would allow nuclear power reactor licensees to incinerate, onsite, slightly contaminated waste oils without the need for a specific license amendment. The incineration operations would be subject to continued compliance with existing plant discharge limits, established in accordance with Part 50, Appendix I. The intent of the proposed rule is to provide a potentially cost-effective and environmentally sound method for disposal for this waste stream other than burial at a licensed low-level waste disposal site. Since the petitioners' primary objective would be achieved through this action, the remainder of the petition would be denied without prejudice.

Contact:
C. Mattsen, RES
492-3638

Category: This is a negative consent item. The action proposed clearly falls within established Commission policy as set forth in 10 CFR 1.31(a)(3) which delegates certain rulemaking authority to the Executive Director for Operations.

Other related documents include: (1) 10 CFR Part 50, Appendix I, which provides numerical guidelines for keeping releases of radioactive materials to the environment to levels which are ALARA; (2) a Policy Statement published in the Federal Register on August 29, 1986 (51 FR 30839), which established standards and procedures for expeditious Commission action on petitions to declare certain waste streams to be "below regulatory concern" (BRC); and (3) an Advance Notice of Proposed Rulemaking published in the Federal Register on December 2, 1986 (51 FR 43367).

In a Staff Requirements Memorandum dated August 12, 1986, the Commission indicated that rulemaking on all requests for exemptions of specific waste streams from Commission regulations will be subject to Commission approval. Although the petitioners requested that radionuclide concentrations be established at which disposal of waste oil may be carried out without regard to the radioactive material content, the proposed action is limited to allowing onsite incineration of waste oil under existing operating effluent limits determined to be "as low as is reasonably achievable."

Discussion: The Edison Electric Institute (EEI) and the Utility Nuclear Waste Management Group (UNWMG) petitioned the Commission on July 31, 1984 (PRM-20-15), to initiate rulemaking to define a concentration of radioactive material in reactor-generated waste oils which would permit disposal of these oils without regard to their radioactive material content. Notice of receipt of this petition was published in the Federal Register on September 19, 1984 (49 FR 36653) with a 60-day comment period. Currently, the

only generically approved method of disposal for low-level radioactively contaminated oil from nuclear power plants involves solidification or immobilization, packaging, and transportation to and burial at a licensed disposal site. The petition was submitted in response to Commission views expressed in the Supplementary Information statement accompanying publication of the final rule that created 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste" (December 27, 1982; 47 FR 57446). In that statement, the Commission expressed its view that the establishment of standards for waste for which there is no regulatory concern would be beneficial and would, among other things, reduce disposal costs, help preserve the limited capacity of the regional licensed waste disposal sites for the disposal of wastes with higher levels of activity, and enhance overall site stability of disposal facilities by reducing the volume of Class A waste (discussed in 10 CFR 61.7(b)(2) and defined in 10 CFR 61.55). That view was further advanced when the Commission published a Policy Statement (August 29, 1986; 51 FR 30839) on the expeditious processing of petitions to exempt specific waste streams from the Commission's regulations. The Commission subsequently published an Advance Notice of Proposed Rulemaking (ANPRM) on December 2, 1986 (51 FR 43367) soliciting public comments on the broad concept of defining classes of waste which were BRC.

The petition predates the Policy Statement and ANPRM and does not include all of the information needed to allow expedited handling. Although the petitioners were accorded an opportunity to supplement the petition by providing the information described in the Policy Statement, they have elected not to do so. Therefore, the petition is not eligible for expedited handling as authorized by Section 10 of the Low-Level Radioactive Waste Policy Amendments Act, as amended.

The petition proposed a broad exemption using a 1 mrem/yr dose criterion with nuclide specific concentration limits for each of several disposal alternatives: on- or offsite incineration, on- or offsite burial, road stabilization (spraying), and recycling.

After due consideration of all the issues involved, the staff has concluded that, in responding to this petition at this particular time, it would not be appropriate to attempt to make a generic determination as to what level of radioactive contamination in waste oil would constitute a level which is "below regulatory concern." The petition did not supply adequate information on which to base the selection of a dose criterion for waste oil nor an adequate basis for evaluating all of the proposed alternatives, although considerable effort was made to equate proposed concentration limits to the proposed 1 mrem/yr dose criterion and also to respond to public comments with a revised petition.

Comments on the EEI/UNWMG petition raised questions concerning some of the specific disposal alternatives and exemption limits proposed by the petitioners. Since the petitioners were unable to supply sufficient information to enable the staff to evaluate all of the disposal alternatives identified by the petitioners, the comments cannot be properly addressed and the petition cannot be granted as proposed.

The staff believes, however, that action on the portion of the petition which would permit onsite incineration of slightly contaminated waste oil is warranted in view of the very small radiological doses imposed on any member of the public in an unrestricted area, the potential reduction in fire and toxic risks, the inordinate costs of disposing of this waste material in licensed low-level waste burial grounds, and the need to use the limited burial ground space most efficiently. The staff is therefore proposing to amend 10 CFR 20.305 to provide this relief

for affected utilities under the ALARA provisions in existing regulations. The staff recommends that the remainder of the petition be denied without prejudice. The petitioners have expressed the view that this approach should provide much of the desired relief.

The proposed rule would apply to all operators of nuclear power plants licensed under 10 CFR Part 50 and would allow the onsite incineration of slightly contaminated waste lubricating oils and hydraulic fluids without the need to apply for a specific license amendment as is presently required under the provisions of §20.302 and §20.305. The incineration could be carried out either in the licensee's existing auxiliary boiler or incinerator, if available, or in an onsite facility specifically constructed for this purpose. Under the provisions of the proposed rule, resulting effluents would be accounted for against existing discharge limits set in individual plant technical specifications, which are generally 15 mrem/year to any organ of an individual in an unrestricted area. These technical specifications have been established under Appendix I to Part 50, which requires licensees to maintain total effluents from each plant or site at or below levels determined to meet the ALARA criterion. Although actual effluents may increase slightly, the total amount of effluents released would not exceed the ALARA criterion and therefore the health and safety of the public would still be adequately protected.

Each licensee would be required to prepare and retain the following types of records in accordance with applicable NRC record retention requirements: (1) a description of equipment, facilities, and procedures that will be used to collect, store, determine the radionuclide content of, and incinerate waste oils; and (2) the results of the radiological and other analyses of each batch of waste oil discharged through the disposal system which demonstrate that effluents from this operation are

maintained at levels below existing plant operating limits established under Part 50 in Appendix I and §50.36a.

The first part of this information would be submitted to the Commission under §50.71(e) as a change to the FSAR since it represents a change to the information submitted under §50.34(b)(2)(i) and (b)(3) and §50.34a in the original license application. A summary of the changes and safety evaluation will also be required by §50.59. The second part will be reported under existing semiannual effluent reporting requirements.

Recommendations: That the Commission:

1. Approve publication of the proposed revision of 10 CFR 20.305, as set forth in the draft Federal Register notice (Enclosure 1).

2. Certify that the rule, if promulgated, will not have a significant economic effect on a substantial number of small entities pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b).

3. Note:

   a. The rulemaking would be published in the Federal Register for a 60-day comment period;

   b. The remainder of the petition will be denied through this rulemaking;

   c. The proposed revision to §20.305 does not exempt resulting effluents from compliance with existing

discharge limits established at each plant in accordance with Part 50, Appendix I;

d. Nothing in this action will preclude or otherwise prejudice further Commission actions on petitions to declare certain waste streams to be "below regulatory concern";

e. The proposed rule does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget approval number 3150-0011;

f. Appropriate Congressional Committees will be informed (Enclosure 3);

g. The Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification regarding economic impact on small entities and the reasons for it as required by the Regulatory Flexibility Act;

h. The Federal Register notice will be distributed by ARM to affected licensees, interested members of the public, and the petitioners;

i. The Office of Governmental and Public Affairs concurs that a public announcement is not needed;

j. A draft regulatory analysis has been prepared by the staff and is provided as Enclosure 2.

k. The staff has prepared an Environmental Assessment as required by the National Environmental Policy Act of 1969, as amended, and, based on that Assessment, has determined that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, the preparation of an Environmental Impact Statement is not required. The Environmental Assessment and Finding of No Significant Impact will be published in the Federal Register as required by 10 CFR 51.35 and 51.119, as Appendix A to the notice of proposed rulemaking. That assessment concludes that the incineration of typical waste oils would not result in impacts to the health and safety of the public or the quality of the environment which are substantially different from those impacts previously considered during individual reactor licensing hearings; and

l. This amendment does not constitute a backfit under 10 CFR 50.109 and a backfit analysis is not required.

Victor Stello, Jr.
Executive Director for Operations

Enclosures:
1. Federal Register Notice
2. Draft Regulatory Analysis
3. Draft Congressional Letter

NUCLEAR REGULATORY COMMISSION

10 CFR Part 20

Disposal of Waste Oil by Incineration

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission proposes to amend its regulations to permit the onsite incineration of slightly contaminated waste oils generated at licensed nuclear power plants without the need to specifically amend existing Part 50 operating licenses. This proposed action would help ensure that the limited capacity of licensed regional low-level waste burial grounds is used more efficiently while maintaining releases from operating nuclear power plants at levels which are "as low as is reasonably achievable" as required by 10 CFR Part 50, Appendix I. Incineration of this class of waste would be carried out in full compliance with Commission regulations restricting the release of radioactive materials to the environment that are currently in force at each operating nuclear power plant. This proposed rule, if promulgated, would constitute a partial granting of a petition for rulemaking (PRM-20-15) submitted by Edison Electric Institute and Utility Nuclear Waste Management Group. Other portions of the petition are being denied.

DATE: The comment period expires on _____. Comments received after this date will be considered if it is practical to do so, but assurance of consideration can only be given to comments received on or before this date.

ADDRESSES: Mail written comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC, 20555, Attention: Docketing and Service Branch. Comments may be delivered to 11555 Rockville Pike, Rockville, MD between 7:30 a.m. and 4:15 p.m. weekdays.

Copies of the petition, the regulatory analysis, and the environmental assessment and finding of no significant impact may be examined and copied for a fee at the NRC Public Document Room at 1717 H Street, NW, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Catherine R. Mattsen, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Telephone: (301) 492-3638.

SUPPLEMENTARY INFORMATION:

Background

The Edison Electric Institute (EEI) and the Utility Nuclear Waste Management Group (UNWMG) petitioned the Commission on July 31, 1984 (PRM-20-15) to initiate rulemaking to define a level of radioactive materials in reactor-generated waste oils which would permit disposal of such oils without regard to their radioactive material content. Currently, the only generically approved method of disposal for low-level radioactively contaminated oil from nuclear power plants involves solidification or immobilization, packaging, and transportation to and burial at a licensed disposal site. The petition was submitted in response to Commission views expressed in the Supplementary Information statement accompanying publication of 10 CFR Part 61 "Licensing Requirements for Land Disposal of Radioactive Waste" (December 27, 1982; 47 FR 57446). In that statement, the Commission expressed its view that the establishment of standards for waste for which there is no regulatory concern would be beneficial and would, among other things, reduce disposal and long-term disposal site maintenance costs, help preserve the limited capacity of the regional licensed waste disposal sites for the disposal of wastes with higher levels of activity, and enhance overall site stability of disposal facilities by reducing the volume of Class A waste. That view was further advanced when the Commission announced its intent (August 29, 1986; 51 FR 30839) to expeditiously process petitions to exempt specific waste streams from the Commission's regulations. The Commission subsequently published an Advance Notice of Proposed Rulemaking, ANPRM, (December 2, 1986;

51 FR 43367) soliciting public comments on the broad concept of defining classes of waste which were "below regulatory concern" (BRC).

The petition, however, predates the Policy Statement and does not include all of the information required for expedited evaluation and handling under the Policy Statement. The petitioners have chosen not to supplement the petition to follow the guidance provided in the Policy Statement.

In the subject petition, the EEI and the UNWMG suggested that an appropriate basis for establishing a cutoff level for determining whether specific waste streams were BRC would be that the direct release of the specific waste streams to the environment would not result in a dose to an individual member of the general public greater than 1 mrem/yr. The petitioners suggested that using a 1 mrem/yr limit, alternative disposal methods, including (1) on- or offsite incineration, (2) on- or offsite burial, (3) road stabilization (spraying), and (4) recycling, could be considered viable alternatives to land burial. The Staff Implementation Plan accompanying the Commission's policy statement published on August 29, 1986 (51 FR 30839) suggested that 1 mrem/yr was low enough to facilitate expedited processing of a petition for exempting a specific waste stream and that higher doses might be acceptable but could require more extensive justification. However, the policy statement and implementation plan dealt with additional criteria which have not been addressed by the petitioners.

After due consideration of the pertinent issues involved, the Commission has concluded that in responding to this petition at this particular time, it would not be appropriate to attempt to make a generic determination as to what level of radioactive contamination in waste oil would constitute a level which is "below regulatory concern." The petition did not supply either adequate information on which to base the selection of a dose criterion for waste oil or an adequate basis for evaluating all of the proposed disposal alternatives. The Commission believes, however, that action on the EEI/UNWMG petition is warranted in view of the very small radiological doses imposed on any member of the public from disposal of waste oil, the potential reduction in fire and toxic risks, the inordinate costs of disposing of this waste material

in licensed low level waste burial grounds, and the need to use the limited burial ground space most efficiently. The Commission is therefore proposing to amend its regulations.

Based on information provided by the petitioners and a Brookhaven National Laboratory report, "Evaluation of Potential Mixed Wastes Containing Lead, Chromium, Used Oil, or Organic Liquids" (NUREG/CR-4730,[1] January 1987), and experience with the few licensees incinerating waste oil under license amendment, the Commission is convinced that, as a class, waste oil generally contains such low levels of radioactive contamination that releases to the general environment from its incineration would have an inconsequential radiological impact on the health and safety of the public, even in combination with other routine reactor effluents. Incineration is a demonstrated disposal technology and one that can be carried out by licensees within already established radiation protection criteria set forth in 10 CFR Part 50, Appendix I. Thus, by maintaining effluents under established limiting conditions for operation, the licensees will continue to maintain doses from effluents that are "as low as is reasonably achievable."

The other disposal methods proposed by the petitioners also appear to have acceptably low radiological impacts. However, adequate information has not been supplied to evaluate the acceptability of these disposal methods. In addition, a number of other considerations limit the desirability of these alternatives in relation to onsite incineration. Some of the more important of these considerations are the following:

1. Because of practical considerations, EPA has recently exempted waste oil from requirements for hazardous waste disposal; however, waste oil does contain a significant amount of toxic constituents. Many of

---

[1]Copies of NUREGs may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. A copy is also available for inspection and/or copying at the NRC Public Document Room, 1717 H Street, NW, Washington, DC.

these constituents are combustible and thus are destroyed during incineration, but not through other proposed disposal methods. The remainder of the toxic constituents are metals which remain in the ash residues from incineration. These residues can be disposed of in a controlled manner in the case of onsite incineration. Incineration in industrial boilers is EPA's preferred method of disposal of used oils; thus, incineration is the most acceptable method based on nonradiological considerations. Neither NUREG/CR-4730 nor the information submitted by the petitioners addressed the nonradiological toxic properties of reactor waste oil; thus, this class of impacts from other disposal methods cannot be adequately considered.

2. Concentrations of radionuclides in the ash from incineration and in the sludge from recycling may be too high to exempt an offsite incinerator or a recycling center from requirements for a radioactive materials license. As noted in Consideration 1, the ash residue may also contain significant quantities of toxic metals. These issues were not evaluated by the petitioners.

3. An offsite incinerator or recycling center might handle waste oil for multiple reactors. This factor has not been adequately incorporated into the petitioners' dose analysis.

4. Landfill disposal, although more economical than low-level waste (LLW) burial, requires much of the same processing and handling and would thus result in less cost and risk savings than incineration.

Analysis of Comments

Fourteen comment letters were received on the subject petition (13 from industry and 1 from a private individual). The fourteenth comment letter consisted of the original petitioners' analysis of the other comments received by the Commission and a revised version of the petition. All but one of the commenters supported the idea of exempting slightly contaminated waste oil from the requirements for disposal at an LLW disposal site and most supported the

petition in its entirety. Many specifically commented on the excessive cost of disposal at an LLW disposal site relative to the health and safety and environmental impacts of alternative disposal methods. One commenter provided a detailed estimate of LLW disposal costs for waste oil. Consideration of these comments contributed to the Commission's decision to provide some relief through an alternative disposal method. However, a few of the commenters raised questions concerning some of the specific disposal methods and concentration limits proposed by the petitioners, such as (1) the concentration of radionuclides in the sludge produced during recycling might be high enough that the recycling center would need a radioactive materials license; (2) consideration should be given to multiple sources of waste oil being handled at one offsite unlicensed incinerator or recycling center; (3) some secondary pathways might be more limiting than those considered by the petitioners; (4) road spraying is prohibited in some areas because of environmental considerations of petroleum products alone; and (5) burial at a landfill will save low-level waste burial space but remains a costly alternative. These and other considerations resulted in the conclusion that incineration onsite was the only clearly acceptable alternative at this time. Although the petitioners addressed these issues in their comment analysis, that analysis was not sufficient.

Other comments were worthy of note. One commenter discussed means of reducing the generation of and the concentration of contaminants in waste oil. Although these methods are likely to be desirable, it is not necessary for the regulations to deal with these specific concepts. Licensees should have flexibility in handling these wastes as long as risks can be kept acceptably low. Several commenters favored the concept of de minimis being applied to other waste streams and regulations. The Commission is currently considering this issue in the context of a potential policy statement that would identify a level of radiation risk below which government regulation becomes unwarranted.

The remaining comments concern details which relate to specific matters that are irrelevant to the proposed course of action; thus, a detailed discussion of these specific comments is not warranted

The Commission is therefore proposing to grant the petitioner's request only with respect to onsite incineration and to deny the other options without prejudice at this time.

The Proposed Rule

The proposed rule, which would apply to all operators of nuclear power plants licensed under 10 CFR Part 50, would allow the onsite incineration of slightly contaminated waste lubricating oils and hydraulic fluids generated onsite without the need to apply for a specific license amendment as is presently required under the provisions of §§20.106 and 20.302. The incineration could be carried out either in the licensee's existing auxiliary boiler or incinerator, if available, or in an onsite facility specifically constructed for this purpose. Each licensee would be required to prepare and retain the following types of records in accordance with applicable NRC record retention requirements: (1) a complete description of equipment, facilities, and procedures that will be used to collect, store, determine the radiological components of, and incinerate waste oils; and (2) the results of the radiological and other analyses of each batch of oil discharged through the disposal system which demonstrate that effluents from the facility, including effluents from this operation, are below existing plant discharge limits established under Part 50, Appendix I, as well as §50.36a.

The first part of this information, the description of equipment and procedures, would be submitted to the Commission under §50.71(e) as a change to the FSAR since it represents a change to the information submitted in the original license application under §50.34(b)(2)(ii) and (b)(3) and §50.34a. The second part, the determination of the quantities released, will be reported under existing semiannual effluent reporting requirements. In addition, the requirements of §50.59 apply. These include the writing of a safety evaluation to assure that the changes do not involve an unreviewed safety question, the submittal of a summary of the changes and of the safety evaluation, and associated recordkeeping.

As noted, the proposed rule does not exempt these effluents from the operating limits developed under Part 50, Appendix I. The licensees are required to demonstrate that all effluents, including those resulting from the incineration of waste oil, meet the effluent dose limits established under Appendix I and are thus "as low as is reasonably achievable." This would be done in practice through a limited modification of the offsite dose calculation manual (ODCM) and the semiannual effluent reports. The ODCM, although not specified in the regulations, is a document required in the technical specifications established under Appendix I, Section IV, paragraph B and §50.36a which contains the analysis methods to calculate offsite doses from effluents; the additions to the ODCM would be included in the first semiannual effluent report following initiation of incineration. This approach for assessing doses from the effluents from the incineration of waste oil has been used in the case of licensees who have incinerated waste oil under a license amendment. The applicable dose limit in limiting conditions for operations, consistent with the design objective in Appendix I of Part 50, is generally 15 mrem/yr to any organ of an individual in an unrestricted area from radioactive iodine and radioactive material in particulate form. Licensees with existing license amendments allowing incineration of waste oil have been maintaining the contribution from waste oil at 0.1% of the dose limit, or on the order of 15 µrem/yr.

Section 20.305(b)(3) of the proposed rule is included so that a technical specification change, constituting a license amendment, will not be necessary, for example, if a release point other than those identified in the technical specifications is used. This provision will also relieve licensees who have already received a license amendment allowing waste oil incineration from requirements in their license that might be more restrictive than is necessary to conform to the requirements of Appendix I of Part 50.

Since no dose criterion is being chosen and the only releases to the environment being allowed by this action are effluents controlled under existing operating limits, this rule does not strictly constitute a BRC determination. Rather, it only makes an exception to the restriction against incineration without prior approval contained in §20.305. The decision

criteria contained in the BRC policy statement of August 1986 have not been explicitly addressed.

Because the proposed rule would allow a licensee to adopt a potentially more cost- and risk-effective means of disposing of this class of waste while maintaining existing limits on plant effluents, the net impact of this action should be positive. For each licensee, the onetime cost of preparing the appropriate documentation to support an incineration operation should be more than offset by direct first-year savings in waste disposal costs. For those licensees who elect to process waste oils in this fashion, monitoring and maintaining records on waste oil disposal activities would be covered by current regulatory requirements set forth in Part 50, Appendix I, which are implemented primarily through technical specifications established under §50.36a. Even if a new incinerator is installed exclusively for this purpose, costs could be recovered in a few years. In addition, risks associated with transportation to the LLW burial site are eliminated and toxic and fire hazards associated with storage would likely be reduced. It should be noted that any solid radioactive residues produced in the incineration process would, for purposes of regulation, be treated as any other low-level radioactive solid waste.

Finding of No Significant Environmental Impact: Availability

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51 not to prepare an environmental impact statement for this proposed amendment to 10 CFR 20.305 because the Commission has concluded on the basis of an environmental assessment that this proposed rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment.

The proposed rule would allow incineration of waste oil at nuclear power plant sites resulting in very small releases of radionuclides to the environment. Total effluent releases from the plants, including those resulting from waste oil incineration, will be maintained at or below existing plant discharge

limits determined to be "as low as is reasonably achievable." Potentially, risks from toxic components in waste oil, fire hazards from storage of oil, and risks inherent in transportation may be somewhat reduced from those associated with the currently available disposal option of burial at LLW disposal sites. Incineration will not require significant quantities of materials, water, or energy and in some cases may involve the recovery of energy. Thus, no significant impact on the environment would result.

The environmental assessment and finding of no significant impact on which this determination is based are published as Appendix A to this document and are available for inspection and copying at the NRC Public Document Room, 1717 H Street, NW, Washington, DC. Single copies of the environmental assessment and finding of no significant impact are available from Catherine R. Mattsen, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, (301) 492-3638.

Paperwork Reduction Act Statement

This proposed rule does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget approval number 3150-0011.

Regulatory Analysis

The Commission has prepared a draft regulatory analysis for this proposed rule. That analysis examines the costs and benefits of the alternative courses of action the Commission considered in responding to the subject petition. The draft analysis is available for inspection at the NRC Public Document Room, 1717 H Street, NW, Washington, DC. Single copies of the draft analysis may be obtained from Catherine R. Mattsen, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC, 20555, Telephone (301) 492-3638.

Regulatory Flexibility Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)) the Commission certifies that this rule will not, if promulgated, have a significant economic impact on a substantial number of small entities. This proposed rule affects only nuclear power plants. The companies that own these plants do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the Small Business Size Standards set out in regulations issued by the Small Business Administration at 13 CFR Part 121.

Backfit Analysis

This amendment to the Commission's regulations would not impose any new requirements on production or utilization facilities; it only allows incineration of waste oils onsite without the need for specific approval by license amendment. The amendment to 10 CFR 20.305 is therefore not a backfit under 10 CFR 50.109 and a backfit analysis is not required.

List of Subjects in 10 CFR Part 20

Byproduct material, Licensed material, Nuclear materials, Nuclear power plants and reactors, Occupational safety and health, Packaging and containers, Penalty, Radiation protection, Reporting and recordkeeping requirements, Special nuclear material, Source material, Waste treatment and disposal.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 552 and 553, the NRC is proposing to adopt the following amendments to 10 CFR Part 20.

Part 20 - Standards For Protection Against Radiation

1. The authority citation for Part 20 continues to read as follows:

AUTHORITY: Secs. 53, 63, 65, 81, 103, 104, 161, 68 Stat. 930, 933, 935, 936, 937, 948, as amended (42 U.S.C. 2073, 2093, 2095, 2111, 2133, 2134, 2201); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

For the purposes of sec. 223, 68 Stat. 958, as amended (42 U.S.C. 2273); §§20.101, 20.102, 20.103(a),(b) and (f), 20.104(a) and (b), 20.105(b), 20.106(a), 20.201, 20.202(a), 20.205, 20.207, 20.301, 20.303, 20.304, and 20.305 are issued under sec. 161b, 68 Stat. 948, as amended (42 U.S.C. 2201(b)); and §§ 20.102, 20.103(e), 20.401-20.407, 20.408(b), and 20.409 are issued under sec. 161(o), 68 Stat. 950, as amended (42 U.S.C. 2201(o)).

2. Section §20.305 is revised to read as follows:

§ 20.305 Treatment or disposal by incineration.

(a) No licensee shall treat or dispose of licensed material by incineration except:

(1) As authorized by paragraph (b) of this section;

(2) For materials listed under §20.306; or

(3) As specifically approved by the Commission pursuant to §20.106(b) or §20.302.

(b)(1) Waste oils (water immiscible organic hydrocarbons used principally as lubricants or hydraulic fluids) that have been radioactively contaminated in the course of the operation of a nuclear power reactor licensed under Part 50 of this chapter may be incinerated on the site where generated provided that the total radioactive effluents from the facility, including the

effluents from such incineration, must conform to the requirements of Appendix I to Part 50 of this chapter. The licensee shall report any changes or additions to the information supplied under §§50.34 and 50.34a of this chapter associated with this incineration pursuant to §50.71 of this chapter, as appropriate. The licensee shall also follow the procedures of §50.59 of this chapter with respect to such changes to the facility or procedures.

(2) Solid residues produced in the process of incinerating waste oils must be disposed of as provided by §20.301.

(3) The provisions of this section authorize onsite waste oil incineration under the terms of this section and supersede any provision in an individual plant license or technical specification that may be inconsistent.

(c) Nothing in paragraph (b) of this section relieves the licensee from complying with other applicable Federal, State, and local regulations governing any other toxic or hazardous property of these materials.

Dated at Rockville, Maryland this _____ day of _____ 1988.

For the Nuclear Regulatory Commission.

_____

Victor Stello, Jr.,
Executive Director for Operations.

APPENDIX A

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

PROPOSED AMENDMENT TO 10 CFR 20.305
DISPOSAL OF WASTE OIL BY INCINERATION

The Nuclear Regulatory Commission is proposing to amend its regulations to allow power reactor licensees to incinerate slightly contaminated waste oil onsite without obtaining the specific approval of the Commission through a license amendment.

Environmental Assessment

Identification of Proposed Action

Present §20.305 forbids the incineration of any licensed material, except that specifically exempted by §20.306, without the specific approval of the Commission. The proposed action would amend §20.305 to allow power reactor licensees to incinerate slightly contaminated waste oil onsite without prior approval. It would not exempt the effluents from this process from the requirements established under Appendix I to Part 50, in particular, effluent limits and effluent monitoring and reporting.

Need for the Proposed Action

The Edison Electric Institute and the Utility Nuclear Waste Management Group petitioned the Commission (PRM-20-15, dated July 31, 1984) to initiate rulemaking to define a level of radioactivity in power-reactor-generated waste oils which would permit disposal of these oils without regard to their radioactive material content. Currently, the only generically approved method of disposal for low-level radioactively contaminated oil from nuclear power plants involves solidification or immobilization, packaging, and transportation

to and burial at a licensed disposal site. The cost of this type of disposal is significant, while the concentrations of contaminants are quite low. The waste oil is a potential candidate for being declared a "below regulatory concern" (BRC) waste. Although there is an ongoing action to resolve comments on an Advance Notice of Proposed Rulemaking (December 2, 1986; 51 FR 43367) for a potential generic rule on BRC wastes, a Commission decision on a generic BRC waste rule is not expected in the near future. Also, EPA is considering a similar standard.

Several power reactor licensees have requested and been granted amendments to their licenses to allow onsite incineration of slightly contaminated waste oil. Others are interested in doing so.

Environmental Impacts of the Proposed Action

The primary impact of this rulemaking is to reduce the administrative effort involved in the application for and issuance of amendments to power reactor licenses to allow incineration of waste oil. However, easing these requirements may result in greater amounts of waste oil being incinerated than would otherwise be the case. Thus, the overall impacts of such incineration must be considered.

Some information on the quantities and concentrations of waste oil generated at nuclear power plants was provided in the petition and in a Brookhaven report "Evaluation of Potential Mixed Wastes Containing Lead, Chromium, Used Oil, or Organic Liquid" (NUREG/CR-4730, January 1987). The amounts and concentrations vary considerably from plant to plant and even from year to year at a given plant. Generally, the volumes produced are approximately 1,000 gal/year at a PWR and up to 5,000 gal/year at a BWR. In addition, some utilities have large quantities in storage on site. Concentrations of radioactive contaminants are typically 10^{-7} to 10^{-5} µCi/ml but can be as nigh as 10^{-3} µCi/ml in some cases. Total activity per reactor per year is generally no greater than 10^{-4} Ci. The dominant radionuclides are Mn-54, Co-58, Co-60, Cs-134, and Cs-137. Others reported include Sr-90, Cd-109, Zn-65, and Zr-95. It appears that the bulk of waste oil generated, in terms of volume, could be incinerated with resultant

individual doses of less than 1 mrem/yr. Licensees with license amendments permitting onsite incineration have been able to dispose of most of their waste oils under a technical specification of 0.1% of the total dose limit, which is generally 15 mrem/yr from radioactive iodine and radioactive material in particulate form (in keeping with the guidance contained in Appendix I of Part 50), or 15 µrem/year. Although waste oil contaminated during reactor operation might eventually be declared "below regulatory concern," this decision is being deferred to the ongoing generic rulemaking on this subject or until a petition following the August 1986 Commission policy is filed. This action modifies the restriction against incineration without prior approval contained in §20.305 to make an exception for waste oil at power reactor sites; however, it does not exempt the resulting effluents from the requirements of Appendix I of Part 50. These limiting conditions for operation include dose limits for effluents and monitoring and reporting requirements. Although this action may slightly increase actual effluents, the radioactivity in these effluents must be accounted against existing limits for total dose from nuclear power plant effluents which have been determined to satisfy the "as low as is reasonably achievable" criterion.

Impacts from the toxic constituents of used oil would be minimized by onsite incineration. (See discussion under "Alternatives to the Proposed Action.") Potentially, the proposed action might result in reduced storage of waste oil onsite thus reducing the associated fire hazard. Also, risks inherent in transportation would be reduced from those associated with the currently available disposal option of burial at LLW disposal sites. Incineration will not require significant quantities of materials, water, or energy and in some cases may involve the recovery of energy, e.g., when the oil is burned in an auxiliary boiler.

Based on these considerations, this action will not result in a significant effect on the quality of the human environment.

Alternatives to the Proposed Action

As required by Section 102(2)(E) of NEPA (42 U.S.C. 4322(2)(E)), possible alternatives to the proposed action have been considered. One alternative considered was to defer any action until decisions are made regarding the ongoing generic BRC rulemaking. However, this alternative would be inconsistent with Commission policy adopted in 51 FR 30839 (August 29, 1986). Since it is apparent that the cost to licensees to solidify or immobilize, package, transport, and bury contaminated waste oil at licensed disposal sites is not justified based on the very limited doses from incineration and the fact that other environmental impacts, if anything, will be reduced, and since it is more cost-effective to allow the incineration through rulemaking rather than to continue processing applications for license amendment, this action should be taken rather than delay the relief any further.

Other alternatives were considered which would have granted more of what the petitioners originally requested. However, methods other than onsite incineration would require more complete information and analysis than was submitted by the petitioners and an NRC decision on a dose criterion for waste oil. Controlled incineration onsite has been demonstrated to be an acceptable technical alternative for disposal of material. Although there is not sufficient information available to preclude allowing any of the other alternatives in the future, incineration appears to be environmentally preferable to the other proposed alternatives. Although used oil is not listed as a Federal hazardous waste, it does contain a significant amount of toxic substances consisting of various organic compounds and metals. Although there may be some environmental impact from the toxic nature of used oil for any disposal alternative, incineration at a controlled site minimizes these effects and is EPA's preferred method for used oil disposal. The organic components are essentially destroyed by the incineration process and the metals essentially remain in the ash residue. Incineration at a controlled site assures that the disposal of the ash residue can be controlled appropriately considering both its radiologic and toxic constituents. Nationally, any nonradiological environmental effect of disposal of radioactively contaminated used oil from nuclear power plants would be small compared to that associated

with the total quantity of used oil disposed. All power plants in total produce on the order of 150,000 gallons/year of such used oil; nationally, vehicle maintenance produces about 700 million gallons/year of used oil.

Any other alternative action to this proposed rulemaking would take longer to complete, thus delaying any relief to licensees and other benefits such as savings in land usage for waste disposal.

Agencies and Persons Consulted

Further consultation has been made with the petitioners (PRM-20-15) concerning this action as a resolution of the petition.

Consideration has also been given to ongoing EPA activities, the 14 comment letters received on the petition, and the Brookhaven report, NUREG/CR-4730.

Finding of No significant Impact

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in 10 CFR Part 51, that this proposed amendment to 10 CFR Part 20 to allow the incineration of slightly contaminated waste oil by power reactor licensees onsite, if adopted, would not have a significant effect on the quality of the human environment and that an environmental impact statement is not required. This determination is based on the foregoing environmental assessment performed in accordance with the procedures and criteria in Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

Regulatory Analysis

Rule to Amend 10 CFR 20.305

DISPOSAL OF WASTE OIL BY INCINERATION

1. Statement of the Problem

The Edison Electric Institute and the Utility Nuclear Waste Management Group petitioned the Commission (PRM-20-15, dated July 31, 1984) to initiate rulemaking to define a level of radioactivity in power reactor-generated waste oils which would permit disposal of these oils without regard to their radioactive material content. This petition responded to Commission views as expressed in the Supplementary Information accompanying publication of 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." (December 27, 1982; 47 FR 57446). In that statement, the Commission recognized that the establishment of standards for waste for which there is no regulatory concern would be beneficial and would, among other things, reduce disposal and long-term disposal site maintenance costs, help preserve the limited capacity of the regional licensed waste disposal sites for wastes with higher levels of radioactivity, and enhance overall site stability of disposal facilities by reducing the volume of Class A waste. The petitioners suggested that, based on recent Commission decisions, a 1-millirem/yr individual dose limit would be an appropriate basis for establishing a cutoff level for defining those wastes that were "below regulatory concern." Further, the petitioners presented several examples where combinations of radionuclide concentrations and disposal methods for waste oil would satisfy the 1 millirem/yr dose limit and proposed wording to revise 10 CFR Part 20 to reflect these recommendations.

A response to this petition requires a staff determination of the need for a generic rulemaking to allow disposal of power reactor-generated, slightly contaminated waste oil by means other than by burial at a licensed disposal site. Among the factors which must be considered in this determination are the following:

(1) Current licensing requirements, imposed on each power reactor operator, that limit the release of radioactive materials to the general environment to ALARA levels.

(2) The existence of Commission regulations which permit the use of alternate waste disposal practices subject to license amendment.

(3) All environmental and safety issues associated with storage on site and transportation of waste oil and impacts from toxic constituents of waste oil.

(4) The financial costs and land use requirements associated with disposing of the very small quantities of radioactive material contained in typical waste oil.

(5) The authority of the Environmental Protection Agency (EPA) to regulate the release of both radioactive and non-radioactive materials to the environment.

(6) The authority of the EPA, which assumed Federal Radiation Council responsibilities, to develop Presidential guidance for use by other Federal agencies on acceptable levels of radiation exposure of the general public.

2. Objectives

The proposed rule would allow nuclear power reactor licensees to incinerate waste oil which has become slightly contaminated from operations associated with nuclear power production. The small

environmental impact from the incineration of the oil, which contains low concentrations of radionuclides, is readily balanced by the savings in disposal costs. Incineration instead of burial would also conserve limited available burial space, reduce risks from the transportation of waste oil (radiological and non-radiological), reduce the fire hazard associated with waste oil storage, and minimize impacts from the toxic constituents of waste oil. Allowing incineration through a rule change, versus continuing to do so through the license amendment process, will make this alternative disposal method available in a more timely manner and with reduced administrative effort for licensees and the NRC.

3. Alternatives

The petitioners requested that the Commission issue a regulation governing the disposal of low-level radioactively contaminated waste oil from nuclear power plants by establishing radionuclide concentrations in waste oil at which disposal may be carried out without regard to the radioactive material content of the waste. This concept of establishing a level of radioactivity or level of radiation exposure below which environmental impacts are so small as to be of no regulatory concern is considered by the Commission to be a valuable addition to the regulatory system. Regulatory staff have been assigned to work with EPA to explore the establishment of a level below which regulatory requirements would cease or be significantly reduced. The petition suggested an individual exposure value of 1 millirem per year would be an appropriate criterion on which to base concentration limits. The justification proposed was primarily on a "de minimis" basis, that is, simply that this level of risk is too trivial to be of concern. The term "below regulatory concern" (BRC) has sometimes been used interchangeably with "de minimis;" however, it is also used in connection with exemptions from specific regulations decided on a cost-benefit basis.

It would be convenient to declare this waste oil to be contaminated to a sufficiently low level that it is of no regulatory concern, thereby allowing it to be disposable without regard to its radioactive

contamination. In its BRC policy statement, the Commission gave some indication of dose levels which might be acceptable for a waste stream specific exemption which would be based on cost-benefit considerations. However, no decision has been made as yet as to whether a single dose criterion should be used in lieu of individual waste stream cost-benefit analysis. Although 1 millirem/year is likely to be acceptable (based on the discussion of decision criterion 2 in the staff implementation plan accompanying the NRC policy statement of August 29, 1986; 51 FR 30839) the petitioners have not supplied sufficient information to allow a specific waste stream "below regulatory concern" determination to be made.

In responding to this petition, there are three basic alternati· urses of action which could be taken: to deny the petition, to defe cion on the petition, or to initiate the rulemaking process. The staff does not believe that a categorical dismissal of this petition at this time is consistent with either the spirit of Commission policy set forth in 10 CFR Part 61 (and reaffirmed in NRC's BRC policy statement published on August 29, 1986; 51 FR 30839), or the need to ensure effective use of licensed low-level waste disposal capacity.

The staff might elect to defer action on this specific petition until public comments on the Advance Notice of Proposed Rulemaking (December 2, 1986; 51 FR 43367) have been analyzed. That notice solicited comments on the broad question of classifying certain wastes as being "below regulatory concern". The staff could also elect to defer action pending issuance by the EPA of standards or guidance on BRC levels of radioactivity or dose.

The staff recognizes the current problems associated with the disposal of waste oil and believes that in the spirit of established Commission policy and consistent with the need to use limited burial ground space as efficiently as possible, a rule change should be made. However, in order for the petition to be granted in full, more information and analysis would be necessary. For example, a more complete characterization of quantities and concentrations of contaminated waste oil would be needed to

make a waste stream specific cost-benefit analysis on which to base specific concentration limits. Also, a determination would have to be made on whether the concentrations of radionuclides possible in the ash from incineration or the sludge from recycling would be low enough to allow waste oil processing at unlicensed facilities. Such additional analyses would result in delay and the expenditure of limited resources. The proposed rule would provide the relief requested in the petition commensurate with the information available. The remainder of the petition will be denied without prejudice. If the rule, as proposed, is made final, generic approval would be provided for the onsite incineration of nuclear reactor waste oils for which the minor environmental impacts are readily balanced by savings in disposal costs and in land use requirements for LLW disposal and reduced impacts from storage onsite and transportation.

Incineration will be allowed without specific license amendment providing the licensee maintains compliance with the licensee's operating limits based on the requirements of 10 CFR Part 50, Appendix I. Any other applicable Federal and State statutes would also have to be satisfied.

This action by the Commission would not preclude the petitioner from resubmitting a future request to declare waste oils or other classes of waste to be "below regulatory concern" pursuant to Commission policy. (See policy statement, 10 CFR Part 2, Appendix B, published on August 29, 1986 at 51 FR 30839.)

4. Consequences

Information provided by the petitioners and in a Brookhaven National Laboratory Report, "Evaluation of Potential Mixed Wastes Containing Lead, Chromium, Used Oil, or Organic Liquids" (NUREG/CR-4730, January 1987) indicates that on average, an operating PWR produces approximately 1,000 gallons per year of slightly contaminated waste oil, and an operating BWR produces approximately 3,500-5,000 gal/yr. Reported contamination levels are usually in the range of 10^{-5} to 10^{-7} μCi/ml, although higher levels

have been reported. The principal radioisotopes present in these waste oils include the usual activation and fission products such as Co-58, Co-60, Mn-54, Cs-134, Cs-137.

Because of restrictions imposed on the disposal of oil wastes in licensed land burial grounds, oil wastes must be stabilized prior to transport to these sites; sorption and solidification are the prevalent treatment methods. Several plants are storing waste oils on an interim basis pending a decision on ultimate disposal.

According to both the BNL report and information provided by the petitioners, solidification of oil wastes effectively doubles the volume of waste requiring disposal while sorption can increase waste volumes by as much as a factor of six.

If directly released to the environment, a typical reactor would, on average, discharge a total of 10^{-4} curies of radioactivity per year via the waste oil pathway. This quantity is a fraction of typical releases in liquid effluents and atmospheric releases allowed under existing plant discharge limits. According to the petitioners, most waste oils could be incinerated without resulting in (conservatively calculated) doses exceeding 1 mrem/year. In fact, those licensees who have been incinerating waste oil under an amendment to their license have been keeping these effluents to 0.1% of their technical specifications for total doses from effluents. In addition, under this rulemaking, until further action is taken in declaring certain wastes "below regulatory concern," the effluents from the incineration of waste oil would be accounted for under existing operating limits contained in Part 50, Appendix I. Thus, the addition of the small quantities of radioactive material present in waste oil to normal plant effluents should have a negligible impact on public health or environmental quality.

Additionally, other environmental impacts of waste oil disposal will likely be slightly reduced, including the risks inherent in transportation

(radiological and non-radiological), the fire hazards associated with storage of waste oil, and the impacts from toxic constituents.

By permitting use of less restrictive disposal methods for this waste, savings in the range of $3-$12 million/year in direct disposal costs can be projected for a mature reactor economy (over 100 reactors, approximately 2/3 PWRs). More importantly, permitting use of alternative disposal options would conserve around 100,000 ft^3/yr of limited low-level burial ground space.

Because the proposed rule would allow a licensee to adopt a potentially more cost- and risk-effective means of disposing of this class of waste while maintaining existing limits on plant effluents, the net impact of this action should be positive. For each licensee, the onetime cost of preparing the appropriate documentation to support an incineration operation should be more than offset by direct, first-year savings in waste disposal charges. If a new incinerator is installed exclusively for the purpose of incinerating waste oil, costs could be recovered in a few years. For those licensees who elect to process waste oils in this fashion, monitoring and maintaining records on waste oil disposal activities would be covered by current regulatory requirements.

5. Decision Rationale

Since the Commission has work underway to determine what action should be taken in regard to a generic rulemaking on BRC wastes and a decision in this area is not expected in the near future, a decision on a dose criterion need not be part of this action. A simpler rule change can provide more timely relief from the costs of disposal of slightly contaminated waste oil at licensed low-level waste burial (LLWB) sites. The incineration of waste oil onsite will not add significantly to the environmental impacts of reactor operations, but may save several million dollars or more per year in disposal costs and preserve LLWB site capacity.

6) Implementation

a) Schedule for Implementation

The estimate of resources necessary to complete action on this rulemaking is 1.5 staff years (combined RES, NRR, NMSS). If adopted, this rule should significantly reduce the potential workload in processing individual requests for specific license amendments to permit incineration (10 man years total). Since this rule would relieve a restriction, the final rule will be effective as soon as published, as allowed by Section 553(d)(1) of the Administrative Procedure Act (5 U.S.C. 553(d)(1)).

b) Relationship to Other Existing or Proposed Requirements

Rule could be superseded by future actions on generic BRC exemptions.

DRAFT CONGRESSIONAL LETTER

Dear Mr. Chairman:

The NRC has sent to the Office of the Federal Register for publication the enclosed proposed amendment to the Commission's rules in 10 CFR Part 20. The amendment, if adopted, would allow nuclear power reactor licensees to incinerate, onsite, slightly contaminated waste oils without the need for a specific license amendment. Such operations would be subject to continued compliance with existing overall plant discharge limits. The intent of the proposed rule is to provide a potentially cost effective and environmentally sound method for disposal of this waste other than burial at a licensed low level waste disposal site. This proposed rule was initiated in response to a petition for rulemaking submitted by the Edison Electric Institute and the Utility Nuclear Waste Management Group.

The Commission is issuing the proposed rule allowing 60 days for public comment.

Sincerely,

Eric S. Beckjord, Director
Office of Nuclear Regulatory Research

Enclosure: As stated

Enclosure 3