UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

OFFICE OF THE
SECRETARY

October 18, 1996

MEMORANDUM TO: James M. Taylor
Executive Director for Operations

FROM: John C. Hoyle, Secretary

SUBJECT: STAFF REQUIREMENTS - SECY-96-190 - FINAL RULEMAKING ON "ENVIRONMENTAL REVIEW FOR RENEWAL OF NUCLEAR POWER PLANT OPERATING LICENSES," 10 CFR PART 51

The Commission has approved the final rulemaking with the addition of the Office of the General Counsel's comments in the memorandum dated September 13, 1996 and with the incorporation of the changes provided in the attachment.

The staff should develop a plan and schedule for the development of a Regulatory Guide and Environmental Standard Review Plan for implementation of this rule.

(EDO) (SECY Suspense: 12/13/96)

Attachment:
As stated

cc: Chairman Jackson
Commissioner Rogers
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
OGC
OCA
OIG
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)

290052

SECY NOTE: THIS SRM, SECY-96-190, AND THE VOTE SHEETS OF ALL COMMISSIONERS WILL BE MADE PUBLICLY AVAILABLE 5 WORKING DAYS FROM THE DATE OF THIS SRM.

O&M-6 SRM

[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 51

RIN 3150-AD63

Environmental Review for Renewal of Nuclear Power Plant Operating Licenses

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule; Effective date.

SUMMARY: The Nuclear Regulatory Commission is amending its regulations on the environmental review of applications to renew the operating licenses of nuclear power plants to make minor clarifying and conforming changes and add language inadvertently omitted from Table B-1 of the rulemaking published June 5, 1996 (61 FR 28467). This final rule also presents an analysis of the comments received and the staff responses to the comments requested in the final rule published June 5, 1996. After reviewing the comments received, the NRC has determined that no substantive changes to the final rule ~~is~~ are warranted.

DATES: This final rule shall be effective on [30 days after publication].

ADDRESSES: Copies of comments received and all documents cited in the supplementary information section of 61 FR 28467 may be examined at the NRC Public Document Room, 2120 L Street NW, (Lower Level) Washington, DC, between the hours of ~~2:45~~ 7:30 am and 4:15 pm on Federal workdays.

Commission has reviewed the comments submitted and finds no need to amend the substantive provisions of the rule.

This direct final rule amends the June 5, 1996 rule with minor nonsubstantive changes. The changes are: addition of five Ground-water Use and Quality issues inadvertently left out of Table B-1 in the June 5, 1996 notice (see, 61 FR 29278, July 29, 1996); minor conforming changes to reflect recent amendments to §§ 51.53 and 51.95 effected by a separate rulemaking ("Decommissioning of Nuclear Power Reactors," July 29, 1996 (61 FR 39278)); substitution of one sentence under Findings for the issue Offsite radiological impacts (spent fuel and high-level waste disposal) in Table B-1, in order to more accurately represent a U. S. Environmental Protection Agency (EPA) regulatory position; and addition of a sentence to 10 CFR 51.53(c)(3)(ii)(M), in order to clarify the information on the environmental effect of transportation of fuel and waste to and from a nuclear power plant that is to be submitted with a license renewal application.

II. Analysis of Public Comments

A. Commenters.

In response to the Federal Register notice for the final rule published on June 5, 1996 (61 FR 28467), 11 organizations and 1 private citizen submitted written comments. The 11 organizations included the EPA; the States of Maryland, Massachusetts, and Vermont; the Nuclear Energy Institute, and 6 licensees. Commenters expressed concerns about specific aspects of the rule and several commenters referred to material in NUREG-1437 which they believe

view of one state that each renewal applicant should come forward with an analysis of the HLW storage and disposal environmental effects; this is a national problem of essentially the same degree of complexity and uncertainty for every renewal application and it would not be useful to have a repetitive reconsideration of the matter.

The Commission further believes that the provisions in the present rule and elsewhere in the Commission's regulations adequately provide for the introduction and consideration of new significant information in license renewal reviews, and that the 10 year review cycle for the rule and the GEIS adequately provides for Commission reassessment of the status of LLW ard HLW disposal programs. The Commission recognizes that the possibility of significant unexpected events remains open. Consequently, the Commission will review its conclusions on these waste findings should significant and pertinent unexpected events occur (see also, 49 FR 34658 (August 31, 1984)). In view of the Commission's favorable conclusions regarding prospects for safe and environmentally acceptable waste disposal, it sees no need for conditioning licenses as recommended. The Category 1 designations for these three issues [low-level waste storage and disposal, offsite radiological impacts (spent fuel and high-level waste disposal), and on-site spent fuel] in the final rule has not been changed in response to these comments.

Comment. Six industry organizations specifically commented on the treatment of the LLW and HLW issues in 61 FR 28467 and in the GEIS. Except for the treatment of the environmental impacts of transportation of radiological material to and from the plant, the industry commenters agree with the Commission's findings on waste issues. Transportation (radiological

Part 51 in this rulemaking do not alter the existing provisions of § 51.52. If an applicant's reactor meets all the conditions in § 51.52(a) the applicant may use the environmental impacts of transportation of fuel and waste to and from the reactor set forth in Summary Table S-4 to characterize the transportation impacts from the renewal of its license. However, because Table S-4 does not take into account the generic and cumulative (including synergistic) impacts of transportation infrastructure construction and operation in the vicinity of the Yucca Mountain repository site, such information would have to be provided by these applicants.

For reactors not meeting the conditions of paragraph § 51.52(a), the applicant must provide a full description and detailed analysis of such environmental effects associated with transportation in accordance with § 51.52(b). Industry commenters pointed out that the conditions in paragraph (a) are not likely to be satisfied by many plants now using higher burn-up fuel. In such cases, applicants may incorporate in their analysis the discussion presented in the GEIS in Section 6.2.3 "Sensitivity to Recent Changes in the Fuel Cycle," and Section 6.3 "Transportation." This category of applicants would also have to consider the generic and cumulative impacts of transportation infrastructure construction and operation in the vicinity of the Yucca Mountain repository site. These impacts may be attributed to an individual plant on a reactor-year basis.

As part of its efforts to develop regulatory guidance for this rule, the Commission will consider whether further changes to the rule are desirable to generically address: 1) the issue of cumulative transportation impacts and 2) the implications that the use of higher burn-up fuel have for the conclusions in Table S-4. After consideration of these issues, the Commission

far below the regulatory limits, limits that represent a small risk. As the Commission's dose limits are based on radiation protection standards established by interagency committees and reflects international scientific consensus on the adequacy of protection standards, the Commission chooses to define radiological risk resulting from these standards as being "small."

Comment. EPA takes issue with the Commission's assumptions, in Section 6.2.2.2 of the GEIS, about regulatory limits for off-site releases of radionuclides for the candidate repository at Yucca Mountain. EPA stated that the Commission should not presume that EPA will adopt the National Academy of Science recommendation regarding a 100 millirem annual dose limit. Further, EPA believes that the GEIS should assume a smaller dose limit as a more conservative bounding estimate, consistent with the stated objective of Table S-3 to represent the worst case or bounding estimate of the potential release from the uranium fuel cycle [GEIS page 6-1].

Response. The Commission does not assume that EPA will adopt a 100 millirem annual dose limit. The discussion in Section 6.2.2.2 is clear that this limit is recommended by the Academy as a starting point for consideration, and that there is some measure of consensus among national and international bodies that the limits should be a fraction of the 100 mrem/year. ~~If it is expected that the limit ultimately to be adopted will be lower than 100 mrem/year, then 100 mrem/year provides a bounding or "worst case" estimate, which is what EPA suggests.~~ At this time, the Commission is not prepared to speculate as to what the final limit will be.

Comment. EPA states: "The NRC has mis-stated the Agency's expectations regarding the performance of a high-level waste repository, and in doing so

health effects. The commenters believe that the number of scientific studies performed over a long period of time which could find no harmful effects is adequate disclosure under the NEPA to designate this issue Category 1. It is suggested that an alternative to a Category 1 designation is rewording Footnote 5 to Table B-1 in the rule to state in a more positive manner that there is no scientific evidence of chronic biological effects on humans and that this issue will not be admitted as a contention in any hearing on a renewal application. One commenter believes that this issue is not related to refurbishment activities and thus should not be addressed in the context of license renewal.

Response. The Commission is not inclined at this time to change the rule relative to the treatment of the chronic human health effects of transmission line electromagnetic fields. The Commission recognizes that ~~some, possibly many, experts would believe that the scientific evidence could support a Category 1 determination. However, the Commission believes that a more conservative position on this issue is appropriate.~~ biological and physical studies of electromagnetic fields have not found consistent evidence linking harmful effects with field exposures and that much of the scientific evidence and many experts in the field arguably would support a Category 1 determination for this issue. However, the Commission also recognizes that research is continuing in this area, and that a scientific consensus on the issue has not yet emerged. Consequently, the Commission believes that a more conservative position on the matter is appropriate at this time. With respect to concern that nonproductive litigation of this issue will take place in license renewal hearings, it should be noted that because of the intensive scrutiny given to this issue within the scientific community, any contention will have to meet scientific standards for admission.

E. Environmental Justice.

Comment. Comments about the treatment of environmental justice in the rule were offered by EPA and two licensees. EPA stated that as the Commission further defines its environmental justice requirements it should consider the

Response. Several considerations led to the Commission's decision to require a supplemental EIS in license renewal reviews. The proposed rule and supporting GEIS would have included a preliminary conclusion of a favorable cost-benefit balance. The function of an EA would have been to consider the impacts associated with a limited set of environmental issues and whether these impacts would overturn the favorable preliminary cost-benefit finding in the GEIS and codified in the rule. Because there was a possibility that the impacts for the limited set of environmental issues would be found to be nonexistent or insignificant (no significant impacts), use of an EA was provided for in the proposed rule. In addition, a finding of no significant impact and the supporting EA may be issued in draft for comment at the discretion of the appropriate NRC staff director. The proposed rule was challenged with respect to preliminary cost-benefit findings and procedural hurdles to public input to the license renewal review. To resolve these concerns, the Commission modified the rule to eliminate the preliminary license renewal finding and to make that finding only after consideration of all impacts within the plant-specific review. The Commission believes that the sum of all the individual impacts that are to be considered in the decision whether to renew a nuclear power plant operating license for an additional 20 years, especially given the controversy over various aspects of nuclear power, exceeds the Commission's threshold for a finding of no significant impact. This and the desire to ensure public access to the license renewal review process led to the requirement of a supplemental EIS for license renewal.

about the treatment of alternatives to license renewal, the Commission believes that the final GEIS and rule adequately accommodate these concerns. The consideration of alternative energy sources in individual license renewal reviews will consider those alternatives that are reasonable for the region, including power purchases from outside the applicant's service area. Also, in assessing the environmental impacts of new generating capacity it will not necessarily be assumed that the capacity would be constructed on the site under review. Finally, consideration of the economic merits of renewing a plant operating license is eliminated only from the Commission's decision whether to renew. The decision about the economic merits of continued operation of a nuclear power plant will be made by the owners and the State regulators.

III. Procedural Background

Because this rule makes only minor clarifying and conforming changes and adds language inadvertently omitted from Table B-1 of the rulemaking published June 5, 1996, and because public comments were solicited on that rulemaking the NRC is approving this rule without seeking public comments on proposed amendments.

IV. No Change in Supplemental Information

No change to the Supplemental Information that was provided in 61 FR 28467, July 5, 1996, is required. The discussions and conclusions made in VII. Finding of No Significant Environmental Impact: Availability; VIII.

(A) If the applicant's plant utilizes cooling towers or cooling ponds and withdraws make-up water from a river whose annual flow rate is less than 3.15×10^{12} ft^3/year ($9 \times 10^{10} m^3$/year), an assessment of the impact of the proposed action on the flow of the river and related impacts on instream and riparian ecological communities must be provided. The applicant shall also provide an assessment of the impacts of the withdrawal of water from the river on alluvial aquifers during low flow.

(B) If the applicant's plant utilizes once-through cooling or cooling pond heat dissipation systems, the applicant shall provide a copy of current Clean Water Act 316(b) determinations and, if necessary, a 316(a) variance in accordance with 40 CFR Part 125, or equivalent State permits and supporting documentation. If the applicant can not provide these documents, it shall assess the impact of the proposed action on fish and shellfish resources resulting from heat shock and impingement and entrainment.

(C) If the applicant's plant uses Ranney wells or pumps more than 100 gallons (total onsite) of ground water per minute, an assessment of the impact of the proposed action on ground-water use must be provided.

(D) If the applicant's plant is located at an inland site and utilizes cooling ponds, an assessment of the impact of the proposed action on groundwater quality must be provided.

(E) All license renewal applicants shall assess the impact of refurbishment and other license-renewal-related construction activities on important plant and animal habitats. Additionally, the applicant shall assess the impact of the proposed action on threatened or endangered species in accordance with the Endangered Species Act.

(F) If the applicant's plant is located in or near a nonattainment or

environmental review. The supplement will only cover matters that differ from the final environmental impact statement or that reflect significant new information concerning matters discussed in the final environmental impact statement. Unless otherwise determined by the Commission, a supplement on the operation of a nuclear power plant will not include a discussion of need for power, or of alternative energy sources, or of alternative sites, or of any aspect of the storage of spent fuel for the nuclear power plant within the scope of the generic determination in § 51.23(a) and in accordance with § 51.23(b), and will only be prepared in connection with the first licensing action authorizing full-power operation.

(c) Operating license renewal stage. In connection with the renewal of an operating license for a nuclear power plant under Part 54 of this chapter, the Commission shall prepare an EIS, which is a supplement to the Commission's NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (May 1996).

(1) The supplemental environmental impact statement for the operating license renewal stage shall address those issues as required by § 51.71. In addition, the NRC staff must comply with 40 CFR 1506.6(b)(3) in conducting the additional scoping process as required by § 51.71(a).

(2) The supplemental environmental impact statement for license renewal is not required to include discussion of (1) need for power or (2) the economic costs and economic benefits of the proposed action or of alternatives to the proposed action except insofar as such benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. In addition, the supplemental environmental impact statement prepared at the license renewal

Table B-1. Summary of findings on NEPA issues for license renewal of nuclear power plants[1]

Issue	Category[2]	Findings[3]
Microbiological organisms (public health)(plants using lakes or canals, or cooling towers or cooling ponds that discharge to a small river)	2	SMALL, MODERATE, OR LARGE. These organisms are not expected to be a problem at most operating plants except possibly at plants using cooling ponds, lakes, or canals that discharge to small rivers. Without site-specific data, it is not possible to predict the effects generically. See § 51.53(c)(3)(ii)(G).
Noise	1	SMALL. Noise has not been found to be a problem at operating plants and is not expected to be a problem at any plant during the license renewal term.
Electromagnetic fields, acute effects (electric shock)	2	SMALL, MODERATE, OR LARGE. Electrical shock resulting from direct access to energized conductors or from induced charges in metallic structures have not been found to be a problem at most operating plants and generally are not expected to be a problem during the license renewal term. However, site-specific review is required to determine the significance of the electric shock potential at the site. See § 51.53(c)(3)(ii)(H).
Electromagnetic fields, chronic effects[5]	NA[4]	UNCERTAIN. Biological and physical studies of 60-Hz electromagnetic fields have not found consistent evidence linking harmful effects with field exposures. However, research is continuing in this area and a consensus scientific view has not been reached ~~because the state of the science is currently inadequate, no generic conclusion on human health impacts is possible~~.[5]
Radiation exposures to public (license renewal term)	1	SMALL. Radiation doses to the public will continue at current levels associated with normal operations.
Occupational radiation exposures (license renewal term)	1	SMALL. Projected maximum occupational doses during the license renewal term are within the range of doses experienced during normal operations and normal maintenance outages, and would be well below regulatory limits.

Footnotes at end of table.

Table B-1. Summary of findings on NEPA issues for license renewal of nuclear power plants[1]

Issue	Category[2]	Findings[3]
		have some statistical adverse health effect which will not ever be mitigated (for example no cancer cure in the next thousand years), and that these doses ~~projection~~ projected over thousands of years are meaningful. However, these assumptions are questionable. In particular, science cannot rule out the possibility that there will be no cancer fatalities from these tiny doses. For perspective, the doses are very small fractions of regulatory limits, and even smaller fractions of natural background exposure to the same populations. Nevertheless, despite all the uncertainty, some judgement as to the regulatory NEPA implications of these matters should be made and it makes no sense to repeat the same judgement in every case. Even taking the uncertainties into account, the Commission concludes that these impacts are acceptable in that these impacts would not be sufficiently large to require the NEPA conclusion, for any plant, that the option of extended operation under 10 CFR Part 54 should be eliminated. Accordingly, while the Commission has not assigned a single level of significance for the collective effects of the fuel cycle, this issue is considered Category 1.
Offsite radiological impacts (spent fuel and high level waste disposal)	1	For the high level waste and spent fuel disposal component of the fuel cycle, there are no current regulatory limits for offsite releases of radionuclides for the current candidate repository site. However, if we assume that limits are

Footnotes at end of table.

Table B-1. Summary of findings on NEPA issues for license renewal of nuclear power plants[1]

Issue	Category[2]	Findings[3]
		~~bound~~ 100 premature cancer deaths with an upper limit of 1,000 premature cancer deaths world-wide for a 100,000 metric tonne (MTHM) repository. Nevertheless, despite all the uncertainty, some judgement as to the regulatory NEPA implications of these matters should be made and it makes no sense to repeat the same judgement in every case. Even taking the uncertainties into account, the Commission concludes that these impacts are acceptable in that these impacts would not be sufficiently large to require the NEPA conclusion, for any plant, that the option of extended operation under 10 CFR Part 54 should be eliminated. Accordingly, while the Commission has not assigned a single level of significance for the impacts of spent fuel and high level waste disposal, this issue is considered Category 1.
Nonradiological impacts of the uranium fuel cycle	1	SMALL. The nonradiological impacts of the uranium fuel cycle resulting from the renewal of an operating license for any plant are found to be small.

Footnotes at end of table.

Table B-1. Summary of findings on NEPA issues for license renewal of nuclear power plants[1]

Issue	Category[2]	Findings[3]

SMALL — For the issue, environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource. For the purposes of assessing radiological impacts, the Commission has concluded that those impacts that do not exceed permissible levels in the Commission's regulations are considered small as the term is used in this table.

MODERATE — For the issue, environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE — For the issue, environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

For issues where probability is a key consideration (i.e., accident consequences), probability was a factor in determining significance.

[4] NA (not applicable). The categorization and impact finding definitions do not apply to these issues.

[5] ~~Scientific evidence about a chronic biological effect on humans from exposure to transmission line electric and magnetic fields is inconclusive.~~ If, in the future, the Commission finds that, contrary to current indications, a consensus has been reached by appropriate Federal health agencies that there are adverse health effects from electromagnetic fields, the Commission will require applicants to submit plant-specific reviews of these health effects as part of their license renewal applications. Until such time, applicants for license renewal are not required to submit information on this issue.

Footnotes at end of table.