

August 3, 1999

FOR: The Commissioners

FROM: William D. Travers /s/
Executive Director for Operations

SUBJECT: FINAL RULE -- "CHANGES TO REQUIREMENTS FOR ENVIRONMENTAL REVIEW FOR RENEWAL OF NUCLEAR POWER PLANT OPERATING LICENSES (10 CFR PART 51)"

PURPOSE:

To obtain Commission approval to publish a final rule in the *Federal Register* to amend environmental protection requirements for license renewal and to release the supporting addendum to the generic environmental impact statement.

SUMMARY:

The final rule will amend the regulations, "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," published in the *Federal Register* on December 18, 1996 (61 FR 66537), by eliminating from 10 CFR Part 51 the requirement that license renewal applicants address the generic and cumulative environmental impacts associated with transportation operations in the vicinity of a high-level waste repository site. This final rule also considers the potential impacts of higher enriched and higher burnup fuel than are currently covered in 10 CFR 51.52 and is supported by the generic analysis in the final report of NUREG-1437, Vol. 1, Addendum 1, titled "Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Main Report Section 6.3--Transportation, Table 9.1 Summary of findings on NEPA issues for license renewal of nuclear power plants."

Also, this amendment would incorporate rule language to be consistent with the findings in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (May 1996), to address local traffic impacts attributable to continued operation of the plant during the license renewal term. This issue was identified in NUREG-1437 for inclusion in the rule. However, the issue was inadvertently omitted from the 1996 rule.

BACKGROUND:

The Commission revised its environmental protection regulations (10 CFR Part 51) for license renewal on December 18, 1996 (61 FR 66537). The amendment was based on the analyses and conclusions reported in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS) (May 1996). In response to the comments received on a version of the rule published on June 5, 1996 (61 FR 28467), the Commission made the following statement: "As part of its effort 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 burnup fuel have for the conclusions in Table S-4. After consideration of these issues, the Commission will determine whether the issue of transportation impacts should be changed to Category 1."⁽¹⁾


In SECY-97-279, "Generic and Cumulative Environmental Impacts of Transportation of High-Level Waste (HLW) in the Vicinity of a HLW Repository," dated December 3, 1997, the NRC staff informed the Commission that it was the staff's preliminary view that the supplemental analyses of the generic and cumulative impacts of the transportation of HLW and of the implications of higher fuel burnup for transportation impacts supports a reasonable technical and legal determination that transportation of HLW is a Category 1 issue and may be generically adopted in a license renewal application. In a Staff Requirements Memorandum (SRM) dated January 13, 1998, the Commission directed the NRC staff to proceed with rulemaking to amend 10 CFR 51.53(c)(3)(ii)(M) to categorize the impacts of transportation of HLW as a Category 1 issue. In a memorandum dated July 1, 1998, the NRC staff informed the Commission of its plans for amending 10 CFR Part 51.

In its July 1, 1998, memorandum the NRC staff also proposed, as an administrative amendment to the rule, to incorporate rule language consistent with the GEIS and to include in license renewal reviews the environmental impacts of transportation on local services in the vicinity of the plant during the renewal term. This issue was identified as a Category 2 issue in NUREG-1437, Section 4.7.3.2. However, the issue was inadvertently omitted from 10 CFR 51.53(c)(3)(ii)(J) and its inclusion in Table B-1 is not explicitly stated. This final rule corrects that omission.

The proposed rule was published for a 60-day public comment period on February 26, 1999 (64 FR 9884), as was a notice of availability of Addendum 1, "Draft for Comment" (February 1999) (64 FR 9889). Although the public comment period for both issuances ended officially on April 27, 1999, in response to concerns expressed by stakeholders about the length of the comment period, in developing the final rule and Addendum 1, "Final Report," the staff considered comments dated as late as June 25, 1999, and received as late as early July 1999.

DISCUSSION:

RELATIONSHIP OF THIS RULEMAKING TO REPOSITORY LICENSING

The NRC is promulgating this rule in order to meet its National Environmental Policy Act (NEPA) responsibilities to consider the environmental impact of its license renewal decisions. In 1996 (61 FR 28467 and 61 FR 66537), the NRC published a rule that codified conclusions regarding the environmental impacts of license renewal (see 10 CFR Part 51, Appendix B to Subpart A). The amendment contained in the attached Federal Register notice ([Attachment 1](#) ) constitutes a relatively small addition to those previously published conclusions. In particular, as discussed above, this amendment ensures among other things that the NRC has considered the likely impacts of transporting spent fuel generated during the license renewal period over a

single transportation corridor in the vicinity of a waste repository.

Because the Yucca Mountain site in Nevada currently represents the most likely candidate for a repository, the NRC has used that site as a basis for its analysis in lieu of considering transportation to an unspecified, hypothetical site. The decision to use Yucca Mountain for the purposes of the current analysis, however, in no way increases or decreases the likelihood that Yucca Mountain will in fact be licensed as a repository for the nation's high-level waste. Instead, it simply provides the NRC with the information it needs to gauge the potential impacts for licensing nuclear power plants for an additional 20-year period. If an application is ever filed by the Department of Energy (DOE ~~EXIT~~), the licensing process for a repository in the vicinity of Yucca Mountain will constitute an entirely separate regulatory action from the proposed final rule. Any NRC decision on a repository license will be accompanied by separate safety and environmental analyses that will include a thorough examination of the environmental impacts stemming from the construction and operation of the repository. If the analyses prepared for the repository licensing decision yield results that are inconsistent with those reached in this proposed final rule, it is likely that the NRC will have to amend the conclusions in Table B-1 of Part 51 to conform with the new findings.

AMENDMENTS TO THE RULE

The current regulations require each applicant for license renewal to review the environmental effects of transportation of fuel and waste in accordance with 10 CFR 51.52, and to discuss the generic and cumulative impacts associated with transportation in the vicinity of the candidate HLW repository site at Yucca Mountain (see 10 CFR 51.53(c)(3)(ii)(M)). The NRC staff has performed a generic assessment of these cumulative impacts, which is reported in

NUREG-1437, Vol. 1, Addendum 1. The analysis focused on Clark County, Nevada because it represents the area with the largest population in the vicinity of the potential repository site. The final rule codifies the conclusions of this analysis in 10 CFR Part 51. In addition, the NRC staff has generically considered the potential impacts of transporting higher enriched and higher burnup fuel than is currently covered in 10 CFR 51.52 and is codifying these findings with this final rule. That assessment concludes that the impacts of transporting spent fuel and waste generated during the license renewal period are small and are consistent with the values in Table S-4 of the Commission's regulations (51.52). Under the Commission's regulations for the environmental review of license renewal decisions (see 10 CFR Part 51, Subpart A, Appendix B), the Commission may reach a conclusion of "small" impact for a particular issue if the:

... 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.

The final rule amends the issue of transportation of fuel and waste from Category 2 to Category 1. In order to reach this Category 1 conclusion on an issue and, thus, not require site-specific analysis of the issue pursuant to 51.53(c)(3)(i), the Commission has made the following findings in accordance with the definitions set out in 10 CFR Part 51, Subpart A, Appendix B:

- (1) The environmental impacts associated with the issue have been determined to apply either to all plants or, for some issues, to plants having a specific type of cooling system or other specified plant or site characteristic;
- (2) A single significance level, in this case "small" has been assigned to the impacts (except for collective offsite radiological impacts from the fuel cycle and from high-level waste and spent fuel disposal⁽²⁾); and
- (3) Mitigation of adverse impacts associated with the issue has been considered in the analysis, and it has been determined that additional plant-specific mitigation measures are likely not to be sufficiently beneficial to warrant implementation.

As a result of this Category 1 finding, neither applicants nor the NRC staff will need to prepare a separate analysis of the issue for individual license renewal cases as long as no new and significant information exists. The analysis in NUREG-1437, Vol. 1, Addendum 1 which forms the technical basis for the rulemaking, relies on a series of conservative assumptions. As such, the results of the analysis overestimate the environmental impacts of all spent fuel shipments converging on one location, such as Yucca Mountain. Although the NRC staff has assessed these impacts as if Yucca Mountain would be the only HLW repository, the staff believes that the impacts calculated for Yucca Mountain bound the impacts that would be experienced for a site other than Yucca Mountain. It is unlikely that any other repository site would have an exposed population greater than that assumed for Las Vegas and it is unlikely that spent fuel shipments from all points of origin converge on and are transported through one metropolitan area. If an alternative to a high-level waste repository at Yucca Mountain is considered in the future, the NRC may need to determine whether such an alternative includes new and significant information that may change the regulatory outcome.

In addition to considering the cumulative impacts of transportation in the vicinity of a repository, the NRC also considered whether use of higher burnup or higher enriched fuel that is shipped to a repository results in impacts consistent with the NRC regulations (51.52, Table S-4-- Environmental Impact of Transportation of Fuel and Waste To and From One Light-Water-Cooled Nuclear Power Reactor). The environmental consequences of incremental increases in the burnup of fuel and the associated use of higher enrichment fuel are discussed in Section 6.2.3 of NUREG-1437. Section 6.2.3 addresses the sensitivity of the data presented in Table S-3 and Table S-4 to the growing use of higher enriched fuel and higher fuel burnup. Table S-3 summarizes natural resource use and effluents to the environment for the uranium fuel cycle, from mining to ultimate disposal of spent fuel. The discussion of the implications for the environmental impact data reported in Table S-4 was not repeated or referenced in Section 6.3, which addresses the incremental impacts of license renewal on the transportation of spent fuel and waste to and from nuclear power plants. Addendum 1 and this final rule clarify the NRC findings on the sensitivity of values in Table S-4 to the use of higher enrichment fuel and higher burnup fuel. The analysis concludes that shipment of higher enriched or higher burnup fuel presently in use results in impacts consistent with the impacts in Table S-4, 10 CFR 51.52. It should be noted that cask designs used to transport or store higher enriched fuel and higher burnup fuel require specific NRC review and approval.

In the course of preparing the final rule, several non-substantive changes to the wording and organization of the final rule language were made in order to maintain the rule's internal consistency. First, the proposed language in 51.53(c)(3)(ii)(J) regarding local transportation impacts in the vicinity of the licensed plant was also placed into Table B-1 under "Public Services, Transportation" under the Socioeconomics section of the Table. Similarly, the proposed language in 51.53(c)(3)(ii)(M) has not been included in the final rule because the matters covered by 51.53(c)(3)(ii) only apply to Category 2 issues and, as such, the inclusion of matters related to a Category 1 issue in that section would not have been appropriate. Instead, the content of the language that had been proposed for 51.53(c)(3)(ii)(M) is adequately covered by the amended entry in Table B-1 itself under the issue of "Transportation" in the Uranium Fuel Cycle and Waste Management section.

RESOURCES:

Resources to complete and implement this rulemaking are included in the current budget.

COORDINATION:

The Office of the General Counsel has no legal objection to this paper. The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objection. The Office of the Chief Information Officer has reviewed this final rule for information technology and information management implications and concurs in it.

The Committee to Review Generic Requirements was briefed on the final rule on July 13, 1999.

RECOMMENDATION:

That the Commission

1. Approve for publication in the *Federal Register* the final rulemaking to 10 CFR Part 51 ([Attachment 1](#)) and the Notice of Availability ([Attachment 2](#)) of NUREG-1437, Vol. 1, Addendum 1 ([Attachment 3](#)) no later than August 23, 1999, in order to meet the current target date for issuance of the final supplemental environmental impact statement on a pending license renewal application (see also 3.d).
2. Certify that this rule, if promulgated, will have no negative economic impact on a substantial number of small entities in order to satisfy the requirements of the Regulatory Flexibility Act, 5 U.S.C. 605(b).
3. Note that
 - a. The staff has completed the rulemaking activities so that the changes to Part 51 will be completed before the scheduled completion of the licensing process for the pending license renewal applications;
 - b. The final rule ([Attachment 1](#)) will be published in the *Federal Register* and posted on the electronic bulletin board for this rulemaking;
 - c. A Notice of Availability of NUREG-1437, Vol. 1, Addendum 1, final report, will be published in the *Federal Register*;
 - d. After Commission approval to publish and before submittal to the Office of the Federal Register, the staff will submit the final report of NUREG-1437, Vol. 1, Addendum 1 to the U.S. Environmental Protection Agency (EPA) pursuant to Section 309 of the Clean Air Act. In order to meet the current target date for issuance of the final supplemental environmental impact statement on a pending license renewal application by November 16, 1999, the final report NUREG-1437, Vol. 1, Addendum 1 needs to be submitted to EPA not later than August 27, 1999. Therefore, Commission approval and any additional guidance needs to be received by the staff not later than August 23, 1999. The staff will also send copies of the *Federal Register* notices to EPA;
 - e. As required by the Regulatory Flexibility Act, a regulatory flexibility analysis has been prepared and is part of the Federal Register notice. The analysis indicates the economic impact on licensees and small entities will not be significant. The analysis will be made available in the Public Document Room. A copy will be sent to the Chief Counsel for Advocacy of the Small Business Administration;
 - f. This final rule will decrease the overall regulatory burden on licensees for information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). This rule has been reviewed by the Office of Management and Budget, and the paperwork requirements were approved on November 10, 1998;
 - g. A press release ([Attachment 4](#)) will be issued;
 - h. The appropriate Congressional committees will be informed ([Attachment 5](#));
 - i. Copies of the Federal Register notice of final rulemaking will be distributed to all licensees as well as commenters on the final rule. The notice will be sent to other interested parties upon request; and
 - j. All States will be sent a copy of the Federal Register notice upon approval for publication.

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Attachments:

1. [Federal Register Notice](#)
2. [Notice of Availability](#)
3. [NUREG-1437, Vol. 1, Addendum 1](#)
4. [Press Release](#)
5. [Congressional Letters](#)
6. [Congressional Review Act Forms](#)

1. In NUREG-1437 and in the rule, Category 1 issues are those environmental issues for which the analysis and findings have been determined to be applicable to all nuclear power plants or to plants with specific types of cooling systems or other common plant or site characteristics. Absent new information that significantly changes the finding, these generic findings may be adopted in plant license renewal reviews. Category 2 issues are those that analysis has shown that one or more of the criteria of Category 1 cannot be met and, therefore, additional plant-specific review is required.

2. This exception only applies to the two entries in Table B-1 labeled "Offsite radiological impacts (collective effects)" and "Offsite radiological impacts (spent fuel and high level waste disposal).