

7.0 Environmental Impacts of Decommissioning

Environmental issues associated with decommissioning, which result from continued plant operation during the renewal term are discussed in the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), NUREG-1437, Volumes 1 and 2 (NRC 1996; 1999).^(a) The GEIS includes a determination of whether the analysis of the environmental issue could be applied to all plants and whether additional mitigation would be warranted. Issues are then assigned a Category 1 or a Category 2 designation. As set forth in the GEIS, Category 1 issues are those that meet all of the following criteria:

- (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 (i.e., SMALL, MODERATE, or LARGE) 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).
- (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.

For issues that meet the three Category 1 criteria, no additional plant-specific analysis is required unless new and significant information is identified.

Category 2 issues are those that do not meet one or more of the criteria for Category 1 and therefore, additional plant-specific review of these issues is required. There are no Category 2 issues related to decommissioning.

Category 1 issues in Table B-1 of 10 CFR Part 51, Subpart A, Appendix B that are applicable to decommissioning of the Virgil C. Summer Nuclear Station (V.C. Summer) following the renewal term are listed in Table 7-1. South Carolina Electric and Gas (SCE&G) stated in its Environmental Report (ER) (SCE&G 2002) that it is aware of no new and significant information regarding the environmental impacts of V.C. Summer license renewal. The staff has not identified any significant new information on these issues during its independent

(a) The GEIS was originally issued in 1996. Addendum 1 to the GEIS was issued in 1999. Hereafter, all references to the "GEIS" include the GEIS and its Addendum 1.

Environmental Impacts of Decommissioning

Table 7-1. Category 1 Issues Applicable to the Decommissioning of V.C. Summer Following the Renewal Term

| ISSUE—10 CFR Part 51, Subpart A, Appendix B, Table B-1 | GEIS Section |
|---|--------------|
| DECOMMISSIONING | |
| Radiation Doses | 7.3.1; 7.4 |
| Waste Management | 7.3.2; 7.4 |
| Air Quality | 7.3.3; 7.4 |
| Water Quality | 7.3.4; 7.4 |
| Ecological Resources | 7.3.5; 7.4 |
| Socioeconomic Impacts | 7.3.7; 7.4 |

review of the SCE&G ER (SCE&G 2002), the staff's site visit, the scoping process, or staff evaluation of other available information. Therefore, the staff concludes that there are no impacts related to these issues beyond those discussed in the GEIS. For all of these issues, the staff concluded in the GEIS that the impacts are SMALL, and additional plant-specific mitigation is not likely to be sufficiently beneficial to be warranted.

A brief description of the staff's review and the GEIS conclusions, as codified in Table B-1, for each of the issues follows.

- Radiation doses. Based on information in the GEIS, the Commission found that

Doses to the public will be well below applicable regulatory standards regardless of which decommissioning method is used. Occupational doses would increase no more than 1 man-rem [0.01 person-Sv] caused by buildup of long-lived radionuclides during the license renewal term.

The staff has not identified any new and significant information on this issue during its independent review of the SCE&G ER (SCE&G 2002), the staff's site visit, the scoping process, or staff evaluation of other available information. Therefore, the staff concludes that there are no radiation doses associated with decommissioning following license renewal beyond those discussed in the GEIS.

- 1 • Waste management. Based on information in the GEIS, the Commission found that

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3 Decommissioning at the end of a 20-year license renewal period would generate
4 no more solid wastes than at the end of the current license term. No increase in
5 the quantities of Class C or greater than Class C wastes would be expected.
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7 The staff has not identified any new and significant information on this issue during its
8 independent review of the SCE&G ER (SCE&G 2002), the staff's site visit, the scoping
9 process, or staff evaluation of other available information. Therefore, the staff concludes
10 that there are no impacts of solid waste associated with decommissioning following the
11 license renewal term beyond those discussed in the GEIS.
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- 13 • Air quality. Based on information in the GEIS, the Commission found that

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15 Air quality impacts of decommissioning are expected to be negligible either at
16 the end of the current operating term or at the end of the license renewal term.
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18 The staff has not identified any new and significant information on this issue during its
19 independent review of the SCE&G ER (SCE&G 2002), the staff's site visit, the scoping
20 process, or staff evaluation of other available information. Therefore, the staff concludes
21 that there are no impacts of license renewal on air quality during decommissioning beyond
22 those discussed in the GEIS.
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- 24 • Water quality. Based on information in the GEIS, the Commission found that

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26 The potential for significant water quality impacts from erosion or spills is no
27 greater whether decommissioning occurs after a 20-year license renewal period
28 or after the original 40-year operation period, and measures are readily available
29 to avoid such impacts.
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31 The staff has not identified any new and significant information on this issue during its
32 independent review of the SCE&G ER (SCE&G 2002), the staff's site visit, the scoping
33 process, or staff evaluation of other available information. Therefore, the staff concludes
34 that there are no impacts of the license renewal term on water quality during
35 decommissioning beyond those discussed in the GEIS.
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- 37 • Ecological resources. Based on information in the GEIS, the Commission found that

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39 Decommissioning after either the initial operating period or after a 20-year
40 license renewal period is not expected to have any direct ecological impacts.

Environmental Impacts of Decommissioning

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2 The staff has not identified any new and significant information on this issue during its
3 independent review of the SCE&G ER (SCE&G 2002), the staff's site visit, the scoping
4 process, or staff evaluation of other available information. Therefore, the staff concludes
5 that there are no impacts of the license renewal term on ecological resources during
6 decommissioning beyond those discussed in the GEIS.

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8 • Socioeconomic impacts. Based on information in the GEIS, the Commission found that

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10 Decommissioning would have some short-term socioeconomic impacts. The
11 impacts would not be increased by delaying decommissioning until the end of a
12 20-year relicense period, but they might be decreased by population and
13 economic growth.

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15 The staff has not identified any new and significant information on this issue during its
16 independent review of the SCE&G ER (SCE&G 2002), the staff's site visit, the scoping
17 process, or staff evaluation of other available information. Therefore, the staff concludes
18 that there are no impacts of license renewal on the socioeconomic impacts of
19 decommissioning beyond those discussed in the GEIS.

20 21 **7.1 References**

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23 10 Part CFR 51. Code of Federal Regulations, Title 10, *Energy*, Part 51, "Environmental
24 Protection Regulations for Domestic Licensing and Related Regulatory Functions."

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26 South Carolina Electric and Gas Company (SCE&G). 2002. *Virgil C. Summer Nuclear Station*
27 *License Renewal Application*. "Appendix E, Environmental Report." Docket Number 50/395;
28 License Number NPF-12. Jenkinsville, South Carolina.

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30 U.S. Nuclear Regulatory Commission (NRC). 1996. *Generic Environmental Impact Statement*
31 *for License Renewal of Nuclear Plants*. NUREG-1437, Volumes 1 and 2. Washington, D.C.

32
33 U.S. Nuclear Regulatory Commission (NRC). 1999. *Generic Environmental Impact Statement*
34 *for License Renewal of Nuclear Plants, Main Report*, "Section 6.3 – Transportation, Table 9.1,
35 Summary of findings on NEPA issues for license renewal of nuclear power plants, Final
36 Report." NUREG-1437, Volume 1, Addendum 1. Washington, D.C.