

7.0 Environmental Impacts of Decommissioning

Environmental issues associated with decommissioning, which result from continued plant operation during the renewal term, were 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 issues could be applied to all plants and whether additional mitigation measures would be warranted. Issues were 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 characteristics.
- (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 did not meet one or more of the criteria of Category 1, and therefore, additional plant-specific review of these issues is required. No Category 2 issues are related to decommissioning McGuire Nuclear Station, Units 1 and 2 (McGuire).

Category 1 issues in Table B-1 of 10 CFR Part 51, Subpart A, Appendix B, that are applicable to McGuire decommissioning following the renewal term are listed in Table 7-1. In its environmental report (ER) (Duke 2001), Duke Energy Corporation (Duke) stated “no new information exists for the issues that would invalidate the GEIS conclusions.” The staff has not identified any significant new information during its independent review of the McGuire ER (Duke 2001), the staff’s site visit, the scoping process, or its evaluation of other available information. Therefore, the staff concludes that there are no impacts related to these issues beyond those discussed in

(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.

Table 7-1. Category 1 Issues Applicable to Decommissioning of McGuire, Units 1 and 2, 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

the GEIS. For all of these issues, the staff concluded in the GEIS that the impacts are SMALL, and plant-specific mitigation measures are 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 during its independent review of the McGuire ER (Duke 2001), the staff’s site visit, the scoping process, or its 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.
- Waste management. Based on information in the GEIS, the Commission found that
 - Decommissioning at the end of a 20-year license renewal period would generate no more solid wastes than at the end of the current license term. No increase in the quantities of Class C or greater than Class C wastes would be expected.

1 The staff has not identified any new and significant information during its independent
2 review of the McGuire ER (Duke 2001), the staff's site visit, the scoping process, or its
3 evaluation of other available information. Therefore, the staff concludes that there are no
4 impacts of solid waste associated with decommissioning following the license renewal term
5 beyond those discussed in the GEIS.

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7 • Air quality. Based on information in the GEIS, the Commission found that

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9 Air quality impacts of decommissioning are expected to be negligible either at
10 the end of the current operating term or at the end of the license renewal term.

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12 The staff has not identified any new and significant information during its independent
13 review of the McGuire ER (Duke 2001), the staff's site visit, the scoping process, or its
14 evaluation of other available information. Therefore, the staff concludes that there are no
15 impacts of license renewal on air quality during decommissioning beyond those discussed
16 in the GEIS.

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18 • Water quality. Based on information in the GEIS, the Commission found that

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20 The potential for significant water quality impacts from erosion or spills is no
21 greater whether decommissioning occurs after a 20-year license renewal period
22 or after the original 40-year operation period, and measures are readily available
23 to avoid such impacts.

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25 The staff has not identified any new and significant information during its independent
26 review of the McGuire ER (Duke 2001), the staff's site visit, the scoping process, or its
27 evaluation of other available information. Therefore, the staff concludes that there are no
28 impacts of the license renewal term on water quality during decommissioning beyond those
29 discussed in the GEIS.

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31 • Ecological Resources. Based on information in the GEIS, the Commission found that

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

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36 The staff has not identified any new and significant information during its independent
37 review of the McGuire ER (Duke 2001), the staff's site visit, the scoping process, or its
38 evaluation of other available information. Therefore, the staff concludes that there are no
39 impacts of the license renewal term on ecological resources during decommissioning
40 beyond those discussed in the GEIS.

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- 1 • Socioeconomic Impacts. Based on information in the GEIS, the Commission found that
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3 Decommissioning would have some short-term socioeconomic impacts. The
4 impacts would not be increased by delaying decommissioning until the end of a
5 20-year relicense period, but they might be decreased by population and
6 economic growth.
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8 The staff has not identified any new and significant information during its independent
9 review of the McGuire ER (Duke 2001), the staff's site visit, the scoping process, or its
10 evaluation of other available information. Therefore, the staff concludes that there are no
11 impacts of license renewal on the socioeconomic impacts of decommissioning beyond
12 those discussed in the GEIS.
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7.1 References

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16 10 CFR 51. Code of Federal Regulations, Title 10, *Energy*, Part 51, "Environmental Protection
17 Regulations for Domestic Licensing and Related Regulatory Functions."

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19 Duke Energy Corporation (Duke). 2001. *Applicant's Environmental Report – Operating
20 License Renewal Stage – McGuire Nuclear Station*. Charlotte, North Carolina.
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22 U.S. Nuclear Regulatory Commission (NRC). 1996. *Generic Environmental Impact Statement
23 for License Renewal of Nuclear Plants*. NUREG-1437, Volumes 1 and 2, Washington, D.C.
24

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