

6.0 Summary of Findings and Conclusions

6.1 Summary of Findings

This chapter summarizes, in a tabular format, the findings and conclusions from the evaluation of environmental impacts related to decommissioning of permanently shutdown commercial nuclear reactors. Table 6-1 presents each evaluated environmental issue and identifies whether the issue is considered generic or site-specific. If the issue is considered generic, then it is assigned a significance level of SMALL, MODERATE, or LARGE. Of the environmental issues (see Table ES-1) assessed, most of the impacts are generic and SMALL for all plants regardless of the activities and identified variables (see Appendix E for a list of the variables). The two types of activities determined to be site-specific are those involving threatened and endangered species and environmental justice issues. Four additional issues are conditionally site-specific. Land-use activities requiring major transportation upgrades, aquatic and terrestrial ecology, and cultural and historic resources are site-specific for activities occurring outside the disturbed areas in which there is no recent environmental assessment. Additionally, the issue of cost was addressed in this Supplement but was not evaluated.

The two issues determined to be site-specific, threatened and endangered species and environmental justice, have been identified as potential sources of impact during decommissioning that cannot be generically considered.

In accordance with the Endangered Species Act of 1973 (P.L. 93-205), the appropriate Federal agency (either the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) must be consulted about the presence of threatened or endangered species. At that time, it will be determined whether such species could be affected by decommissioning activities and whether formal consultation will be required to address the impacts. Each State should also be consulted about its own procedure for considering impacts to State-listed species.

Informal consultation will be initiated with the appropriate service shortly after the licensee announces permanent cessation of operations. It is expected that any formal or informal consultation will be completed prior to the licensee beginning major decommissioning activities which can occur 90 days after the submission of the post-shutdown decommissioning activities report (PSDAR).

Executive Order 12898 (59 FR 7629), dated February 16, 1994, directs Federal executive agencies to consider environmental justice under National Environmental Policy Act (NEPA). Although the NRC is an independent agency, the Commission has committed to undertake environmental justice reviews. The staff expects that the licensee, as part of the environmental portion the PSDAR submittal, will provide appropriate information related to the issue of

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1 environmental justice. The licensee should provide an analysis that supports its conclusion that
2 the decommissioning actions contemplated by the licensee do not result in impacts that are
3 borne disproportionately by minority and low-income groups. If the licensee concludes that
4 there is a possibility of disproportional impacts to minority and low-income groups then the
5 licensee needs to describe what actions might be taken to mitigate these impacts.
6

7 The staff will conduct an inspection of the licensee's documentation to determine if there is
8 sufficient justification for the licensee's conclusions on the issue of environmental justice.
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10 **6.2 Conclusions**

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12 Licensees undergoing or planning decommissioning of a nuclear reactor facility can use this
13 Supplement in support of their evaluation of the environmental consequences from
14 decommissioning. The impacts identified in this Supplement are designed to span the range of
15 impacts for all reactor facilities currently permanently shut down as well as for the reactor
16 facilities that are currently operating, including the facilities that have or may renew their license
17 for an additional 20 years beyond the original 40-year license. When planning a specific
18 decommissioning activity, licensees that fall within the range of the impacts, as described in
19 Chapter 4, may proceed with the activity with no further analysis. However, if a site falls outside
20 the range of the identified environmental impacts, then the activity cannot be performed until (a)
21 further site-specific analysis is completed along with a license-amendment request and (b) NRC
22 has approved the license amendment (the license-amendment request will provide an
23 opportunity for a public hearing).
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25 **6.3 References**

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27 Endangered Species Act, as amended 16 USC 1531 et seq. Executive Order 12898. 1994.
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29 Executive Order 12898. 1994. "Environmental Effects of Federal Programs on Minority and
30 Low-Income Populations." 59 FR 7629, February 16, 1994.

Table 6-1. Summary of the Environmental Impacts from Decommissioning Nuclear Power Facilities

	Issue	Generic	Impact
5	Onsite/Offsite Land Use		
6	- Onsite land use activities	Yes	SMALL
7	- Offsite land use activities	Yes	SMALL
8	- Offsite activities that require major transportation upgrades	No	Site-specific
9	Water Use	Yes	SMALL
10	Water Quality		
11	- Surface water	Yes	SMALL
12	- Groundwater	Yes	SMALL
13	Air Quality	Yes	SMALL
14	Aquatic Ecology		
15	- Activities within the boundaries of previously disturbed areas or outside the disturbed areas with a current ecological assessment	Yes	SMALL
16	- Activities outside the boundaries of previously disturbed areas and no recent ecological assessment	No	Site-specific
17	- Activities outside the boundaries of previously disturbed areas and no recent ecological assessment	No	Site-specific
18	- Activities outside the boundaries of previously disturbed areas and no recent ecological assessment	No	Site-specific
19	Terrestrial Ecology		
20	- Activities within the boundaries of previously disturbed areas or outside the disturbed areas with a current ecological assessment	Yes	SMALL
21	- Activities outside the boundaries of previously disturbed areas and no recent ecological assessment	No	Site-specific
22	- Activities outside the boundaries of previously disturbed areas and no recent ecological assessment	No	Site-specific
23	- Activities outside the boundaries of previously disturbed areas and no recent ecological assessment	No	Site-specific
24	Threatened and Endangered Species	No	Site-specific
25	Radiological		
26	- Activities resulting in occupational dose to workers	Yes	SMALL
27	- Activities resulting in dose to the public	Yes	SMALL
28	Radiological Accidents	Yes	SMALL, or MODERATE, or LARGE
29	Occupational Issues		
30	- Noise, temperature, ergonomic, and biological hazards	Yes	SMALL
31	- Physical hazards from construction activities, electrical shock, and accidental falls	Yes	MODERATE
32	Cost	NA ^(a)	NA
33	Socioeconomic		
34	- Population change <3%	Yes	SMALL
35	- Population change between 3% and 5%	Yes	MODERATE
36	- Population change >5%	Yes	LARGE
37	- Annual tax revenue loss <10%	Yes	SMALL
38	- Annual tax revenue loss between 10% and 20%	Yes	MODERATE
39	- Annual tax revenue loss >20%	Yes	LARGE
40	Environmental Justice	No	Site-specific

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Table 6-1. (contd)

Issue	Generic	Impact
Cultural and Historic Resource Impacts		
- Activities within the boundaries of previously disturbed areas or activities outside the boundaries of previously disturbed areas with a current cultural resource survey available	Yes	SMALL
- Activities outside the boundaries of previously disturbed areas with no current cultural resource assessment	No	Site-specific
Aesthetics	Yes	SMALL
Noise	Yes	SMALL
Transportation	Yes	SMALL
Irretrievable Resources	Yes	SMALL
(a) A decommissioning cost assessment is not a specific National Environmental Policy Act (NEPA) requirement. However, an accurate decommissioning cost estimate is necessary for a safe and timely plant decommissioning. Therefore, this Supplement includes a decommissioning cost evaluation, but the cost is not evaluated using the environmental significance levels nor identified as a generic or site-specific issue.		